UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION

CHARLES KRIK, Plaintiff,	)	
vs.	)	No. 10 C 7435
OWENS-ILLINOIS, INC. and EXXON MOBIL OIL CORP., Defendants.	)	Chicago, Illinois April 21, 2015 1:15 o'clock p.m.

VOLUME 2
TRANSCRIPT OF PROCEEDINGS - Trial
BEFORE THE HONORABLE MANISH S. SHAH
and a Jury

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(Jury out. Proceedings heard in open court:)

THE CLERK: 10 C 7435, Krik versus Crane Company, et al., jury trial.

THE COURT: Okay. Good afternoon. The jury is willing to stick around a little bit later today, tomorrow, and Thursday till about 5:00 o'clock. So if that's okay with the parties, I'd like to take advantage of that time.

MR. McCOY: Sounds good.

THE COURT: Any housekeeping issues to take up?

MR. McCOY: Judge, I just want to make a brief proffer of evidence on one point, which is the one day of exposure evidence. Everything else I'll wait as it comes up. But I'd like to proffer one day since you already ruled on that one.

THE COURT: Okay. Go ahead.

MR. McCOY: We're on the record?

DR. ARTHUR LEONARD FRANK, M.D., PLAINTIFF'S WITNESS,
PREVIOUSLY SWORN
VOIR DIRE EXAMINATION

BY MR. McCOY:

Q. Dr. Frank, I wanted to ask, in terms of lung cancer, is there evidence out there that a single day of exposure can -- to asbestos, can be the cause of lung cancer?

A. Yes, in animal studies.

Q. Can you just explain to us where that comes from, the

studies?

A. The study by Wagner in 1974, the British Journal of Cancer, he had animals exposed to varying periods of asbestos. The shortest period was one day, and some of the animals developed lung cancer with only one day of exposure. With greater exposures, as per you would expect with a dose-response relationship, more animals got lung cancer with increasing amounts of exposure.

Q. Was this study published?

A. It was published in the British Journal of Cancer, a peer-reviewed journal.

Q. Approximately when did you say it was?

A. 1974.

Q. Is that data and that study something that you consider reliable?

A. Yes.

Q. Is that data something that others in your field have also considered reliable?

A. Yes.

MR. McCOY: Judge, I would proffer that testimony on the issue of causation as to how much dose it would take to cause lung cancer. And I also would add that the defense has introduced animal studies through the deposition you just heard, and their position is there is a safe level, and this evidence also not only relates to the dose and causation but

would relate to the question of whether there is a safe level.

THE COURT: Is there any inquiry that the defendants want to do with respect to the 1974 study with the witness?

MR. CASMERE: Does the Court want us to?

THE COURT: I'm giving you an opportunity to inquire based on the evidentiary proffer of the witness's testimony, which is limited to the existence of the Wagner study in 1974.

VOIR DIRE EXAMINATION

BY MR. CASMERE:

Q. That was in rats.

A. Yes. They're animals.

Q. Three rats.

A. Two rats.

Q. Two rats. And out of dozens that were exposed for one day, right?

A. There was -- I forget the exact number, but there were no lung cancers in the control group. So animals with no exposure got no lung cancers, two with one day got it, and the numbers went up with increasing amounts of exposure.

Q. Was this a strain of Wistar rats?

A. Well, I honestly don't remember what strain of rats they used. The usual strains are either Wistar rats or F3 44. Those are the ones that are generally used in laboratories.

Q. Is this a strain that's known to be susceptible to getting cancer?

A. Not particularly, no.

Q. Is there a strain of Wistar rats that's known to get -- is susceptible to getting cancer?

A. Not that I'm aware of, but I don't know the rat veterinary literature that well. But again, no animals in the control group -- if they were susceptible, none of the animals in the control group, and there were a couple hundred, I think, got lung cancer.

MR. CASMERE: Thanks.

THE WITNESS: You're welcome.

MR. BLACKWELL: No questions from Owens.

THE COURT: Any argument that the defendants want to make in response to the evidentiary proffer that we've just heard?

MR. CASMERE: Not with Dr. Frank standing here.

THE COURT: Well, Dr. Frank, why don't you step outside for a minute.

THE WITNESS: Yes, sir.

MR. CASMERE: Sorry, Dr. Frank.

(Witness exits courtroom.)

MR. CASMERE: First as to the point that Mr. McCoy raised about the animal studies that were brought up during Mr. Hazard's deposition, he has a claim that my client didn't investigate its product before we produced it. And that's obviously not true.

That study, it will become obvious later, was published, and there was no cancer found in those animals. That's apples and oranges in terms of what's going on here.

What's going on here is now there's two rats in an experiment in 1974 some doctor was able to produce lung cancer for one day of exposure. It's not relevant to humans. There is no testimony that that's convertible to a human being's exposure. If this were a case of lung cancer in rats maybe it would be relevant, but it's not.

MR. BLACKWELL: Your Honor, there is no testimony that the rat study that was referred to was even meant to simulate human exposures, much less workplace exposures.

And beyond that, this whole line of a single day and so on, it just gets us right back around to the same point where he's trying to accumulate exposures to be able to say they all add up, one by one, every exposure, etcetera.

And for that matter also, to the extent that the doctor is now espousing opinions based upon rat studies, he didn't do so in his report and he didn't do so at his deposition. So this is new.

MR. McCOY: Judge, that obviously was not an opinion, that's what's published in the literature.

And I would also comment that Owens-Illinois in their testimony of Mr. Hazard and his -- as I understand their position in this case based on that is that there is a safe

level. I mean, that that level was one that would protect everybody from getting any disease, including lung cancer, and that's why there is no warning on their boxes.

THE COURT: That's not what the Hazard testimony was. But I'm going to overrule the defendants' objection to this limited testimony; that Dr. Frank can say that there exists a 1974 study that made this finding.

So with that, can we resume the testimony with the jury in the box?

MR. McCOY: Yes.

THE COURT: Okay.

MR. McCOY: Just give me about two minutes to get everything in order and I'll be ready to go.

THE COURT: Okay, I'll give you two minutes. I think the jury is lined up outside, so let's try and get this together.

MR. McCOY: As long as it takes to get Dr. Frank in here. I don't want him coming in late.

(Witness enters courtroom.)

MR. McCOY: I'm just clarifying with Dr. Frank the limited testimony he just gave can be admitted, but the every exposure is still off limits.

THE COURT: Correct.

MR. McCOY: Okay.

THE COURT: You can have a seat while Mr. McCoy gets

ready for everybody else.

MR. McCOY: I'm set now, Judge.

THE COURT: Okay. Let's bring in the jury.

(Jury in.)

THE COURT: Good afternoon. Please be seated.

Members of the jury, good afternoon. We'll resume with Dr. Frank's testimony.

And I understand that you are able to stay a little bit past 4:30 today, and I do appreciate that. I appreciate your attention, close attention to the case.

And before I forget, Ms. Lloyd, I did receive your note as well. It's taken under advisement. Hang in there with us as we continue the trial.

And one other housekeeping matter to let you all know is that on Friday we will be ending early. We'll be ending early on Friday, around 3:15 or so. So that's in part why I'm looking for any opportunity I can to make up some time, but I appreciate your patience, and we can resume with Dr. Frank's testimony.

DR. ARTHUR LEONARD FRANK, M.D., PLAINTIFF'S WITNESS, PREVIOUSLY SWORN

DIRECT EXAMINATION (Resumed)

BY MR. McCOY:

Q. Dr. Frank, did you have a chance to look at some of Mr. Krik's medical records?

A. I did.
Q. These are the ones from the hospitals and doctors that he saw, right?
A. Yes, sir.
Q. I worked with you to come up with a selection for the jury, and I'm just going to go through that selection here one by one.
A. Yes, sir.
Q. I'm going to use this Elmo over here to do it.

First I'll -- and by the way, you do have an understanding of Mr. Krik's smoking history, right?
A. I do.
Q. Approximately from 1952 through 1982?
A. Yes. He smoked different amounts at different periods and had a three-year period where he didn't smoke.
Q. You understand that for at least from sometime after he got in the Navy in '54 he started smoking for some period of time a pack and a half a day?
A. Yes, sir.
Q. And you also had an opportunity then to get an understanding of his history of asbestos exposure, right?
A. I did.
Q. And you understood that to include starting sometime in 1954 in the Navy?
A. Yes, sir.

Q. Continuing to approximately the same time he quit smoking in '82?

A. Yes, sir.

Q. So the first record -- and please tell me if I'm going too fast. I'm trying to move this along quickly for the jury by --

A. Certainly.

Q. -- focusing on things here, but let me know.

So this record here -- so this is one from his treating physicians. Can you -- this would be -- it says: "Chest, two views."

What's that?

A. It's a chest X-ray, back-to-front view, and a side view as well.

THE COURT: So for purposes of the record, Mr. McCoy, is there an exhibit number on this, and is there any objection to these records being admitted?

MR. CASMERE: No, Your Honor.

THE COURT: Okay.

MR. CASMERE: Are we going to do them one by one?

THE COURT: If you've seen them all, then you can --

MR. CASMERE: The ones he's shown we have no objection.

THE COURT: And just for the record, what exhibit number are we going to refer to?

MR. McCOY: This is Exhibit No. 5, this first

document.

THE COURT: It's admitted.

BY MR. McCOY:

Q. This is a chest X-ray from 2003 here?

A. Yes, sir.

Q. So I've highlighted a part in here, please explain anything further that hasn't been highlighted, the part I highlighted says: "Emphysematous changes of both lungs are seen."

What's the significance of that in the context of Mr. Krik's case here?

A. Emphysema is one of the diseases of the lungs that's not cancer. The most common cause for it is cigarette smoking, but there are also other reasons that will give you emphysematous changes, which means a breakdown of lung tissue. And in addition to his smoking Mr. Krik has a history as part of his work being a welder, studied welding, and welding on a regular basis. That also can cause this as well.

Q. What is it about welding: The fumes that it generates?

A. Yes, the welding fumes.

Q. Anything else on this one?

A. No, sir.

Q. Okay. The next one is Exhibit No. 4, and this one is from the Department of Radiology at Palos Community Hospital. What type of imaging was this one?

A. This was also a chest X-ray, two views.

Q. And this one is, looks like -- I don't have my glasses. I'll get them.

This is September of 2004, right?

A. September 21st, 2004, and the highlighted areas state: "Minimal pleural thickening laterally/bilaterally seen, which could be secondary to asbestos exposure."

Q. Let's stop at that one for a second.

What's the significance of that in terms of your assessment of Mr. Krik?

A. This is the kind of change that you see almost exclusively with exposure to asbestos. Cigarette smoking will not cause pleural thickening.

And the reason that this is extraordinarily likely to be related to asbestos, there are other causes of thickening of the pleura, but they're usually on one side, and it's only with asbestos that you would get it on both sides.

Q. Does this pleural thickening happen overnight?

A. No.

Q. Or is this something that develops over time?

A. It develops over time. It can take literally decades to appear.

Q. It's the same latency concept you talked about?

A. Exactly.

THE COURT: May I ask a question, Doctor?

THE WITNESS: Certainly.

THE COURT: Just to make sure I'm thinking about this the right way.

The pleural thickening, that would not be cancer, is that right?

THE WITNESS: That is correct. As I mentioned to the jury this morning, there are nonmalignant, noncancerous changes, scarring, and pleural thickening is another expression of scarring.

THE COURT: Thank you.

BY MR. McCOY:

Q. Is it fair to say these are like markers or evidence of asbestos exposure?

A. Very much so, yes. And a considerable amount of exposure.

Q. Okay. Next one we've got highlighted says: "Linear fibrotic strands in the lung bases."

What's the significance of that one?

A. From just that description it is unclear. One of the possibilities is that it could be --

MR. CASMERE: I'm going to object, Your Honor. It's speculation. He said it's unclear. Now we're speculating.

THE COURT: Objection sustained.

Doctor, I think the easiest thing would be to just tell us what those words mean and --

THE WITNESS: Linear fibrotic strands means what appears to be scar tissue at the base of the lung, on both

sides in this case.
BY MR. McCOY:
Q. And based on what you know about Mr. Krik, what do you -- do you have anything that you would attribute that to?
MR. CASMERE: Objection, Your Honor. Foundation. Causation.
THE COURT: Overruled.
BY THE WITNESS:
A. The likely explanation in Mr. Krik's case is his prior exposure to asbestos.
BY MR. McCOY:
Q. Does smoking cause this kind of linear fibrotic strands?
A. No.
Q. And the next statement is: "Chronic obstructive pulmonary disease." That's smoking-related?
A. Yes. That's another term for the emphysematous changes we saw in the previous X-ray report.
Q. Is it fair to say then that this document, Exhibit 4, from 2004, which is four years before the lung cancer diagnosis, shows markers of both asbestos exposure and cigarette smoking?
A. That is a fair statement.
Q. The next document is Exhibit No. 153. This one is from Morris Hospital, and it's -- let me find the date. You can find it faster than me. Page 2.
A. 3/5/08.

Q. So now we're talking about March of 2008?

A. Correct.

Q. In here they find -- I've highlighted this statement here: "There is a spiculated noncalcified 1.5 centimeter posterior lateral left lower lobe lung nodule less than one centimeter from the overlying pleural surface. This is worrisome for a primary lung malignancy."

What's the medical -- the layperson's explanation of that?

A. Simply put, this looks like a lung cancer to the radiologist.

Q. And that's like one centimeter, a small tumor?

A. Yes.

Q. Okay. They haven't diagnosed it yet, but --

A. No. That's why it says it's worrisome. The radiologist can't diagnose it completely on the X-ray, but that's his strong suspicion.

Q. And this was, it says, a CT scan --

A. Correct.

Q. -- of the chest, right?

A. Yes.

Q. That's different than X-rays?

A. It's a different kind of radiologic procedure. It gives you more of a three-dimensional view of the chest, not just a static view of the chest X-ray.

Q. So moving forward from that March 2008, the next document we picked out here was -- this one is November 12, 2008, and it says: "Rad chest."

What's that? Is that an X-ray?

A. Radiology, chest X-ray, two views again, the standard two views.

Q. This one is November 2008, so about eight months after the last one, and the part I've highlighted says: "There is a linear area of increased parenchymal density in the right mid lung and in the left base which has the appearance for areas of discoid atelectasis or scarring."

So again, this is Exhibit 167. I would ask you to give us a layperson's explanation on that.

A. This is where the radiologist is looking at the X-ray, seeing changes at the lung bases, which is the common area for asbestosis, and is not able to discern if it is a condition called discoid atelectasis, which means that the air sacs collapse, or if it is scarring, which is the fibrotic equivalent. It's another word for the fibrosis that the earlier radiologist said, and again, could well be related to his prior exposure to asbestos.

Q. So next is Exhibit No. 2. This one is November 20 of 2008. This is a cervical pathology report.

What's a pathology report, for those who may not know?

A. It's when a doctor trained in looking at tissue examines it through the microscope and makes a judgment, is it normal tissue, is it abnormal, or is it so abnormal that he would call it cancer. He or she.

Q. And it says: "There is a number of specimens."

Do these represent different parts of the lung area, or --

A. Yes.

Q. How about the lymph nodes, are they for the lung?

A. Lymph nodes are areas that are part of the immune system. They drain lymph, which is the tissue fluid that carries around immune cells. And you have nodes every so often, and cancer cells will deposit in those and show evidence of spread of some cancers.

Q. All right. So does this then report the findings that were made after the pathologist read this?

A. Yes.

Q. It says: "Frozen section diagnosis reported to doctor as malignant adenocarcinoma consistent with --"

A. There is a B missing there.

Q. Bron --

A. It should say bronchiolar.

Q. It's cut off. Bronchial alveolar tumor.

A. It's a specific type of lung cancer, and the causes of this type of lung cancer are both cigarette smoking and asbestos.

Q. Talking about the adenocarcinoma?

A. Yes.

Q. It has another section here I've highlighted which says: "Left lower lobe lobectomy demonstrating the following attributes."

What's a left lower lobe lung lobectomy?

A. On the right side of the lung there are three lobes. On the left side there are two lobes. What the doctors did here is took out half the lung on the left side, the lower lobe, leaving only the upper lobe.

Q. A lobe is like a --

A. A section.

Q. A section. Like an ear lobe, except in the lung?

A. Well, there's three sections on the right, they're a little smaller, there are two sections on the left. Each one is a little bigger. They took out one whole section on the left, so essentially a quarter of the totality of the lung tissue.

Q. So this next part that I've highlighted says: "Pleural tissue demonstrating incipient pleural plaque formation, site designated left pleura."

A. If you recall we saw earlier an X-ray that talked about bilateral, both sides, pleural thickening. Now what we have, now that the tissue was taken out of Mr. Krik, a pathologist looked at it through the microscope, he confirms that that thickening that was seen on the X-ray actually does exist and

is a pleural plaque. And the most common cause of pleural plaques is exposure to asbestos.

MR. CASMERE: I object to foundation and characterizing this document beyond what's actually written there and what the doctor meant or saw.

THE COURT: The objection is overruled.

BY THE WITNESS:

A. This document, for the record, is 15 -- I'm sorry. Is 02, if you mention that or not.

BY MR. McCOY:

Q. The pleural area or the pleura again is what part of the lung?

A. The lining on the outside of the lung and the inside of the chest wall. The rib cage. There's two pleuras actually. This is the one on the outside of the lung. When they took the lung out they took the pleura with it.

Q. This particular report is actually based on having tissue under the microscope?

A. Yes, sir.

Q. I'm going to switch to this other document for a second.

There we go. Okay.

This is not Mr. Krik's lung, but it's a demonstration, a type of photograph that you might even use in medical teaching, right?

A. It's actually -- it's not a photograph, it's a drawing or

painting by Frank Netter.
Q. Okay.
A. He's a physician, medical illustrator. I'm well-familiar with his work. And this shows the scar tissue that we call pleural plaques.
Q. So this is the type of finding that was seen when the pathologist looked at -- he didn't see all of this, but he saw a piece of that plaque?
A. Correct.
MR. CASMERE: Objection. Foundation.
THE COURT: The objection is overruled. You can inquire on that later.
BY MR. McCOY:
Q. And so the plaque is what area? Is it the white or the red?
A. It's the white.
Q. Is the red the normal type of lung color that you see?
A. The red is normal. The white is abnormal.
MR. MORRIS: Your Honor, not to interrupt, I know it's demonstrative, but should we give these a number, too, so the record is clear?
MR. McCOY: It has a number. We'll look it up and come back to it, Judge.
THE COURT: Ladies and gentlemen, let me just note for your purposes that some exhibits are being used as

demonstrative exhibits, and what that means is that they are not evidence in the case that you will be considering during your deliberations. They are pieces of -- it's really a way of demonstrating and assisting the witness in describing what the witness is testifying.

So to the extent you hear reference to demonstrative exhibits, keep in mind that those are exhibits that you will not be considering during your deliberation.

BY MR. McCOY:

Q. Dr. Frank, I'm going back to Exhibit 2. I'm going back to Exhibit 2 which we were looking at.

This is the report from November 19th, the surgical pathology report. I want to turn to page 2?

A. Yes, sir.

Q. Okay. Page 2 says -- the part I've highlighted says: "Multiple focally anthracotic lymph nodes negative for metastatic adenocarcinoma."

What does that mean: Anthracotic lymph nodes?

A. When you look at tissue, particularly tissue from the lung, a description that is used to describe the finding of black particles in the lung is the expression anthracotic pigment, or in this case anthracotic lymph nodes. It comes from an 1813 term of anthracosis, which was coal dust that deposited these black pigments.

And are there are many causes of the deposition of

this black pigment: Coal dust, people who work in bakeries can get it, it's been seen secondary to air pollution, and cigarettes will also do it. But there are many factors that will give you this deposition of black pigment in the lung, and that's what that refers to.

Q. Does the finding of this anthracotic pigment mean that it has to be smoking-related?

A. Absolutely not. As I just said, it could be many things. In Mr. Krik's case specifically, besides some of the things that I mentioned, his smoking would be a cause of it, but Mr. Krik was also a welder for part of his career. Welding fumes will do that as well, air pollution can do it, if he worked around coal, I believe some of his work was in power plants so he may have been around coal. All of that would give him anthracotic pigments, not just his cigarette smoking.

Q. Okay. That's the end of 2. Let's go to Exhibit 166.

This makes mention of the -- and this is on the discharge from the lung procedure.

This makes mention of a history of penile cancer. Is that something that you'd seen in the records?

A. Oh, yes, I saw it in his records. It was several months earlier in the same year, March or April of 2008. His lung cancer was in November. I had been aware of that.

Q. Does that penile cancer have anything to do with the lung cancer?

A. No, absolutely not. And it was described in the records as being two separate cancers.

And for the record, penile cancer would not be caused by exposure to asbestos.

Q. And as far as the status of his penile cancer, based on the records that you've seen today --

A. The records that I've seen shows that he's doing well from that and seems to have no difficulty following his surgery at that time.

Q. No evidence of any current penile cancer, right?

A. Correct.

Q. And same true for lung cancer; no evidence of any lung cancer?

A. At the present time here we are, seven years later, there is no evidence of his lung cancer. His cancer was at an early stage; he has done well. One can't yet say for sure that he's cured from that, but he's had a much greater longevity than many people would with lung cancer. That's because his was at an early stage.

Q. All right. The next record is Exhibit No. 8. And this is from the same time period as all the other lung procedure there, 11/26/08, which would be soon after the surgery.

And this is another chest X-ray, right?

A. Yes, sir. Just before he was discharged.

Q. Right. So this part I've highlighted says: "There is a

combination of presumed atelectasis as well as subtle ground glass opacity in the left perihilar region and lower lung as well as possible small pleural effusion or consolidation at the lateral base."

What I'd like to do is to just briefly explain what that means, and then I'll ask the next question about asbestos and smoking.

A. This is following his surgery and appear to be the kinds of changes you would see relatively acutely after surgery. Here we have evidence of what's thought to be atelectasis or parts of the lung that aren't aerating well.

The ground glass opacity is yet another expression that some radiologists use to talk about scarring or atelectasis, but since it's talked about separately, the radiologist thought of them as two separate problems.

Perihilar means the central part of the lung, lower lung, and pleural effusion is small amount of fluid which could be the residual of the surgery that he'd had just a few days before.

Q. Now, do any of these findings, to you as a medical doctor, have anything to do with either asbestos or cigarette smoking?

A. At this point they're more related to the surgery that he just had and could not be said to be just the asbestos or smoking.

Q. Okay.

MR. McCOY: For the record, Judge, that was Exhibit No. 66, where we had the illustration of the pleural plaques.

THE COURT: Okay. Thank you.

BY MR. McCOY:

Q. Next we've got Exhibit 13, the last one on the medical records.

This is Joliet Oncology, a final report, and this one is dated June 14th of 2011.

It says: "Type of examination: PET scan."

Is that another radiological procedure?

A. It's another radiological procedure done with radioactive sugar molecules that highlight tumor tissue, because tumor tissue is metabolically more active than other tissue. So it's done to see if there is any recurrence of the cancer.

Q. This part I've highlighted here says: "There is calcified pleural plaque bilaterally probably due to asbestos exposure."

What -- calcified pleural plaque, we've already talked about the pleural plaque. What does calcified mean?

A. Sometimes these plaques, which are scar tissue, for reasons that we don't quite understand, calcium will deposit in them. It's like getting a bone spur where you get calcium deposit in connective tissue in your tendons or in your joints sometimes. But bilateral calcified pleural plaques I've never seen, nor have I ever heard of any cause of this other than asbestos, with the one exception of a very small percentage of people

exposed to talc, which is a chemical very similar to asbestos but occurs with much less frequency.

And for somebody like Mr. Krik, who I don't know had any exposure to talc, but now has had many, many years of exposure to asbestos, the almost certainty, as the radiologist suspected, was that his qualified pleural plaques on both sides was due to his prior exposures to asbestos.

Q. What's the significance of the both sides?

A. Again, there are occasions where pleural thickening will occur on one side only. It can be from asbestos, but it also can be related to chest trauma.

For example, somebody who was in an automobile accident with a steering wheel may have hit them in the chest on one of their sides could get some pleural thickening and very rarely those could become calcified. But to see it on both sides is extraordinarily -- I've never seen it, except for some reports of talc exposure, in anything but exposure to asbestos.

The one other case of a calcified diaphragmatic plaque, which is not what we're dealing with here, where the diaphragm becomes calcified, was due to somebody who had trauma from a knife wound, but this, much, much more likely than not, was due to his exposure to asbestos.

Q. Does that chronic obstructive pulmonary disease, the COPD from smoking, does that contribute to breathing problems later?

A. Yes.
Q. Could that be a reason why he has the breathing device now?
A. Yes.
Q. How about these other findings, like the scarring that you're talking about?
A. The scarring would contribute, the fact that he's lost a quarter of his lung essentially, all of that will contribute to shortness of breath and the requirement for supplemental oxygen.
Q. How about the calcified bilateral pleural plaque?
A. That's much harder to say. There are many studies that show that plaques in most people don't affect their breathing, but there are some studies and some work in a particular setting, there happens to be some studies I've done in Libby, Montana, that show that plaques can contribute to shortness of breath.

So they could be part of it, but you can't tease out how much is to this, how much is to that, how much is to something else. Clearly the fact that he lost his lung is easy to understand and a major piece of why Mr. Krik would be short of breath. But if he had emphysematous changes, which would be, as I said already, from the cigarettes and likely from some welding activities, that would further add to that and complicate his pulmonary care.

Q. How about pleural thickening; can that affect the breathing

shortness?

A. I would have to give you the same answer. It can, and in some people it does, but when you have a combination of factors you can't say this one does it, this one doesn't do it, and how much. It just -- you can't sort it out that way.

Q. Okay. Next question: What's the term "attribution" mean when you talk about the cause of a disease? Very briefly.

A. It means cause. What do you say was the cause, or what do you attribute it to.

Q. Okay. And how do you go about attributing the cause of lung cancer in Mr. Krik?

MR. CASMERE: Objection, Your Honor.

THE COURT: Sustained.

BY MR. McCOY:

Q. How do you go about attributing, in the field of asbestos disease where you've got asbestos and smoking, the cause of lung cancer?

MR. CASMERE: Objection, Your Honor.

THE COURT: The objection is sustained.

BY MR. McCOY:

Q. Dr. Frank, I'd like to get one of the documents you've got in your stack there, I think it's Exhibit 306, and it's the Helsinki report.

Are you familiar with that one?

A. Yes, sir.

MR. BLACKWELL: Objection, Your Honor.

THE COURT: The objection is overruled. We'll take it one question at a time.

MR. BLACKWELL: Your Honor, objection.

MR. CASMERE: We object to the display of the document.

THE COURT: Let's go to the sidebar.

(Discussion at sidebar on the record:)

THE COURT: So the issue for me is to get a better handle on what you intend to do with the Helsinki report and how the Helsinki article is to be considered by this witness in terms of what the witness's testimony is going to be.

MR. McCOY: It's an example of the methodology by which he determined the cause of lung cancer and any asbestos disease, and it's just the methodology that is followed by, like I said, a large, large number of people in the scientific field.

THE COURT: Right, but that all leads to the methodology, as I understand it, that underlay his opinion in this case, which was ultimately not an admissible basis to make the conclusion that he made.

MR. McCOY: It doesn't. It doesn't state the every exposure contributes, no. The first question is -- see, the every exposure, Judge, goes to is it Mobil or is it Owens-Illinois. The question of what caused the disease

overall is what the Helsinki methodology is about. That's how scientists go about determining this, and that's not based on every exposure contributes.

THE COURT: But it's based on, as I understand it, it's based on the cumulative nature of exposure --

MR. McCOY: Right.

THE COURT: Mr. McCoy, let me finish my thought. -- and to draw that link in this particular trial with these particular defendants, being the only defendants that the jury is supposed to consider, that testimony does not fit the particular facts of this case that the jury has to consider.

And in light of the pretrial rulings about the limited scope of Dr. Frank's testimony and the fact that a significant part of his opinion was not to be admissible, there is now an additional concern that I have, which is that to try to get at it along the margins of these at a very high level of generality -- which I can appreciate your attempt to do so -- but at a high level of generality, it then interjects a confusion and, in fact, a prejudice to the defendants because the building blocks aren't there; that to skip to a broad picture, as I think the Helsinki report and the cumulative exposure causation that you are alluding to here would do, would end up being unfairly prejudicial and confusing to the jury.

So I'm not going to allow that.

MR. BLACKWELL: Your Honor, could we make one request since we're all here? Mr. McCoy, before he puts things up and shows them to the jury, could we at least have a chance to see it first in case there is an objection of some kind?

THE COURT: You should. Before you publish something, you should let the defense know that you want to put it on the screen.

MR. McCOY: Judge, I mean, I said it many times, but Dr. Frank's opinion on if he did it, if he did give it in the case, which I never said he would, ever, in this case, myself, that was a motion by the defense to strike him from giving that testimony. But the ruling on that was limited to the statement that every exposure contributes. The Helsinki report is only about how you would go about determining the overall cause.

We presented this in front of Judge Lee, and he specifically distinguished that, you know, in the argument about every -- about the overall total exposure being distinct from whether a particular defendant is a cause.

THE COURT: Well, that piece of that presentation is ultimately what led Judge Lee to conclude that it was not proper in the way it was being attempted to fit in this particular case, so I'm not going to allow the reference to the Helsinki article.

MR. McCOY: All right. I just -- I need to somehow then get to the point of these hypotheticals based on these

defendants.

THE COURT: Well, you've laid the foundation of this witness's background, his experience; you can ask him a hypothetical, and we'll see how that goes.

MR. McCOY: I'll go -- I will do it this way, okay? I will ask him, like I said: Will one day cause it, will one month cause it. I don't mean to -- I mean, what dosage will cause it, and then I will go to the specific hypotheticals. He's not going to say --

MR. MORRIS: No.

MR. BLACKWELL: That's exactly what shouldn't happen.

THE COURT: That does run afoul of the ruling. One thing that you haven't done with the jury is elicit the 1974 article.

MR. McCOY: I will do that.

THE COURT: You can establish that, but the --

MR. McCOY: I'll do some other ones, too.

THE COURT: -- but the overall basis of any opinion of his that would be that yes, that could cause cancer is, as we've discussed before, all part of this any exposure testimony.

So you can ask your hypotheticals, and we'll take it a hypothetical at a time, but I think I have been clear as to what the scope of the ruling is.

MR. CASMERE: He's establishing a foundation that the

rat study in 1974 is relevant to Mr. Krik.

THE COURT: You can draw that out, but it's an article that exists in the literature and is a historical part of fact, and we are going to receive, as I understand it, plenty of historical facts about the history of these products, so I'll allow that.

MR. CASMERE: Here's another concern I have. He's continually asking questions that he knows run afoul of your rulings, and I have to stand up and object, and those objections are sustained. Now we're suggesting he has to ask the hypothetical out there and I have to stand up and object again. That prejudices me, because every time he asks a foundational question I have to stand up and object.

He has to tell us now what those hypotheticals are going to be so that the Court can rule on them, so I don't have to get up yet again and object to a causation question, and he's just doing it so I have to stand up and look like I'm afraid of the answer.

MR. MORRIS: That's true. Two jurors shook their heads when Mr. Casmere made his third objection.

THE COURT: That's what happens in trials. The jurors are instructed that they're not to consider objections against any lawyer. They're going to ultimately be instructed that lawyers have a duty to object if they believe an objection is proper, they're going to get my rulings whether the

objection is overruled or the objection is sustained, they will be told what to do with that. We have been doing trials that way for a long time now. I'm not concerned that that's an unfair procedure to have in place.

I do caution Mr. McCoy to adhere to the rulings, and you'll have to use your judgment about what you think is within the bounds of the ruling or not, and if there is an objection I'll take the objection up, but I think we can all fairly appreciate that this witness's causation opinion is significantly limited. If there is any room for any causation opinion at all from him, it's very limited, and based on his report and everything that we've seen in the pretrial filings, I've yet to see an opinion from Dr. Frank that would be admissible.

So with those observations, let's go back.

MR. BLACKWELL: Your Honor --

MR. CASMERE: We haven't seen it, so why are we going to elicit him to give a new opinion? If you haven't seen it, we haven't seen it. We have disclosure issues. We shouldn't be hearing about it for the first time. And then I have to stand up and object.

We know this is coming. This is a problem that can be ameliorated right now if he would tell us what they're going to do.

MR. McCOY: A proffer of evidence -- I can't sit here

and read every question. I don't know what objections are getting sustained. I think all my questions are proper. That's within light of Judge Lee's ruling.

THE COURT: Okay. Let's go back to the examination.

MR. MORRIS: Since he brought up the Helsinki study, I would ask you to instruct the jury to disregard it.

THE COURT: I will.

(End of discussion at sidebar.)

THE COURT: Ladies and gentlemen, there was an article that was briefly published on the screen. You're not to consider that article.

You may proceed.

BY MR. McCOY:

Q. Dr. Frank, what is the literature that scientifically you rely upon about the duration of the dosage of asbestos that's necessary to cause lung cancer?

MR. CASMERE: Objection, Your Honor.

THE COURT: The objection is overruled. The question is what is the literature, so you can answer the question about what literature there is.

BY THE WITNESS:

A. There is a lot of literature that I rely upon that describes the amounts of asbestos that are necessary to produce disease both in animals and in humans.

BY MR. McCOY:

Q. Can you tell us the examples of that literature and the duration or the doses in terms of period of time that are involved in that literature?

MR. CASMERE: Objection, Your Honor.

THE COURT: Overruled.

BY THE WITNESS:

A. Starting with the animal literature, there is data where people looked at two kinds of cancer that were related to having animals breathe asbestos, they had rats breathe it for varying periods of time, and what they found is that in as little as one day of exposure where the animals breathe asbestos and never again caused a small number of cancers, including lung cancer. For --

BY MR. McCOY:

Q. Okay. Go ahead.

A. For human data, specifically for lung cancer, there is a study --

MR. BLACKWELL: Objection, Your Honor.

THE COURT: The objection is overruled. Continue your answer.

BY THE WITNESS:

A. For lung cancer, there is a study from a factory in Patterson, New Jersey that was studied by Dr. Selikoff I would examine as part of my experience within those workers as well. It was a factory where there was a huge turnover of workers

during World War II. Some of them worked there a long time, but many of them worked for very shorts period of time, including a month or less.

And when that data was looked at for workers who worked at this factory in New Jersey, one month or less than one month of total work time with no other exposures known to asbestos doubled the risk of those individuals getting lung cancer. And by the time you worked there for two years or more, you had a seven-fold increased risk of getting lung cancer. Again, the dose response curve documenting this.

There are also, not for lung cancer but other forms of cancer, individual case reports, some of which have made it into the literature of one day of exposure giving rise to cancer.

BY MR. McCOY:

Q. The study about the rats that got lung cancer in a day from asbestos, who is the author of that, and where was it published?

A. It was Dr. Wagner published in the British Journal of Cancer 1974.

Q. Is that peer-reviewed?

A. It is a peer-reviewed journal.

Q. And the human data you talked about for the factory in New Jersey where it was a month or less for lung cancer?

A. That was published in the annals of the New York Academy of

Sciences, again a peer-reviewed publication, after a major asbestos meeting that was held in New York.

And the one day was the work of Greenberg and Davies published in The Lancet, a British medical journal, on short-term exposure to asbestos and the development of disease. And that was 1974. I forget the page numbers.

Q. New York Academy of Sciences, what role has that organization played in asbestos disease?

A. A very significant one. Dr. Selikoff was a governor, he was one of the members of the board of directors. They even elected him an honorary life governor when his term was up. And three times, once in 1964, that was before I joined him; once in 1979 when I was with him; and once in 1991 when he invited me back to be with him, I had left Mount Sinai by then, there were major multi-day conferences on asbestos and asbestos-related diseases, each one being published as a collection of those papers, somewhere around 6 or 700 pages worth of scientific papers, all of which were peer-reviewed, to make it into the final publication.

And the Patterson, New Jersey factory data can be found in the second of those, I think it's Volume 330, published in 1979.

Q. Are you aware of any data that was actually done measuring how much asbestos was in the air when Mr. Krik was working?

A. None whatsoever. I'm not aware of any data. If it exists,

I haven't seen it, and I imagine if you had it to show me you would have.

Q. If someone is cutting and sawing pipe covering, as you've seen in a setting like whether it's a Navy shipyard or an oil refinery, how many asbestos fibers are being released into the air during that kind of activity?

MR. CASMERE: Objection, Your Honor. Foundation.

THE COURT: Objection sustained. That's outside the scope of this witness's disclosure.

BY MR. McCOY:

Q. All right. Are you familiar with a product called Kaylo?

A. I am.

MR. CASMERE: Objection, Your Honor. Foundation. Outside of the scope of this witness's Rule 26 disclosures.

MR. McCOY: Judge, he had the depositions.

THE COURT: There is an objection, Mr. McCoy. The objection to that question: "Are you familiar with a product called Kaylo," is overruled.

MR. CASMERE: I would request a sidebar, Your Honor.

THE COURT: Let's keep going, but I understand the concern.

Let me just get the first answer, which is: Are you familiar with a product called Kaylo.

BY THE WITNESS:

A. Yes, I am.

BY MR. McCOY:

Q. How do you know about Kaylo? What's your basis for your experience or knowledge?

A. Many different avenues of investigation, including working for lawyers on behalf of the company that made that who hired me to testify about Kaylo, so I had to become quite knowledgeable about that.

And there are other lines of inquiry I've made of workers who have used it, of understanding the materials that went into the product, and have certainly examined and spoken to many workers who have worked with that product. But I actually did work for the company that made it.

Q. Now, I'd like you to, first of all, take into account what you learned from Mr. Krik's medical records, and I'd like you to assume that he personally installed or removed, cleaned up over 200 boxes of asbestos containing Kaylo from 1954 through the end of 1960; and that visible dust was generated from the cutting and removing of the Kaylo with hammers; and that he was working in smaller areas, inside ship boilers and compartments. I'd also like you to assume that he had a history of smoking cigarettes of a pack and a half, one and a half packs per day during this same period of '54 through the end of '60, and then he developed lung cancer in 2008.

Taking into account those assumptions and what you know about his medical records, what is your opinion as to

whether this dose was a substantial factor in causing Charles Krik's lung cancer?

MR. CASMERE: Objection, Your Honor.

THE COURT: The objection is sustained.

BY MR. McCOY:

Q. I'd also like to ask you to assume, Dr. Frank, that Mr. Krik had worked two to three weeks in small enclosed huts at a Mobil Oil refinery in 1975, about, and he removed, using a hammer, over 150 linear feet of asbestos-containing pipe covering from lines that were two-inch and three-quarter-inch lines. And, of course, the same history of smoking cigarettes of about a pack and a half per day in the same period.

Do you have an opinion about the cause of Mr. Krik's lung cancer based on that and the medical records you've seen?

MR. BLACKWELL: Objection, Your Honor.

THE COURT: The objection is sustained.

MR. McCOY: Judge, I can continue with the rest of this if you like me to.

THE COURT: Well, why don't we have another sidebar.

(Discussion at sidebar on the record:)

THE COURT: So, each of the hypotheticals that were posed just now for which I sustained objections were hypotheticals that a response from the witness that included an opinion that yes, that would cause lung cancer, would, in fact, have been based on what the witness had previously disclosed in

his report, which was this notion that cumulative exposures and, as the witness had previously testified in Judge Pallmeyer's case, that you can't separate out individual exposures in rendering a causation opinion, which is exactly the problematic aspect of the opinion. So those hypotheticals are not proper in light of the pretrial rulings.

If the remainder of the hypotheticals are going to be similar, that would inexorably lead the witness to opine that yes, that hypothetical could cause cancer, but it's based on the witness's previously-stated opinions that you can't separate out any particular exposure, and that it's the cumulative exposure that leads to the causation, then none of them are appropriate, and I can give you that ruling now to save time.

MR. McCOY: All right. So the only way I know to deal with this is I can finish the few other questions I have here, and then I'd like to make another proffer of evidence.

MR. MORRIS: I'd rather that the questions and proffer go together.

MR. McCOY: If you want to do the proffer now, I'll do the proffer now.

THE COURT: What, in effect, would the proffer be that is --

MR. McCOY: His answer to the questions.

THE COURT: But that is --

MR. McCOY: And the medically derived that has been previously disclosed consistent with his Rule 26 disclosure.

MR. CASMERE: I'm looking at his Rule 26 report, and it doesn't include most of this, so there is a disclosure problem as well.

THE COURT: I don't want to take the time to do a proffer now if it's a proffer of things that have not been disclosed to the defense, because that's not problem.

MR. CASMERE: And not when I don't have a chance to cross-examine this man today.

And I want to note for the record in the deposition of Dr. Frank, page 128 lines 8 through 11, Mr. McCoy says he will stipulate that Dr. Frank will not be testifying as a witness about the brand names of a particular type of product at trial.

He just did it. I stood up and objected, made a Rule 26 objection, and he had the stipulation in there, and then he did it anyway. I'm not standing up there objecting, Your Honor.

THE COURT: I understand the objection. The objection was overruled at the time. We've moved past that point. If there is an issue we need to take up later, we can take that up later.

So the question to you, Mr. McCoy, is how do you want to proceed with this witness on the stand right now?

MR. McCOY: I'm happy to finish my question. Like I said, I have to make a proffer.

THE COURT: But you didn't answer my question, which is: What about your proffer has been previously disclosed --

MR. McCOY: The proffer of the evidence, okay.

THE COURT: -- in his expert disclosure.

MR. McCOY: Okay. Within his expert disclosure are the materials he relied upon. The materials he relied upon include the substance of what's in the hypotheticals. Judge Lee ruled he can testify to a hypothetical. He said in his deposition he's going to testify to a hypothetical.

THE COURT: That's not an accurate statement of Judge Lee's ruling, because Judge Lee's ruling was he could testify to a hypothetical consistent with Judge Lee's opinion on keeping out the any exposure basis for his opinion.

MR. McCOY: That's part of the proffer, is to explain how the any exposure basis is not actually his opinion. So the proffer deals with that aspect.

As far as the disclosure issue goes, that's something that I don't have any questions about there being a disclosure of this information, because he had the deposition testimony of Krik, he had a chance to be deposed on it, he said he would testify to hypotheticals, and this is one of the exposures that's in the case.

Judge Lee actually said that the testimony was okay,

in addition to that statement that I just made about what happened in the past. So as we came here today, I'm relying on that proper disclosure and what Judge Lee ruled. Those are the two things.

Again, I can make this clear at any point in time. I'm happy to -- I don't have all of the documents in front of me to go through it line by line, but I will if you need to go through the disclosures.

MR. BLACKWELL: Your Honor, is it fairest to all concerned, since Mr. McCoy wants to make his proffer, and if we have to get up and down again it is somewhat prejudicial to us; if he has ten minutes to simply do it outside the presence of the jury, and then we come back. I know Your Honor is certainly concerned about moving this along, but it's a bit sticky now.

MR. CASMERE: I haven't heard a single thing where he said he disclosed what he's going to do, and now he wants to bring it up brand new at trial. We briefed and argued this thing, and now we're going to take up more time.

You have the report. We have a deposition. He can't point to anything in here about what he wants to do. Why we're taking up more time right now for a proffer he's just going to make up, and he had to disclose this years ago -- we briefed this thing.

MR. BLACKWELL: The issue is we haven't heard it,

though, and Your Honor hasn't heard it.

THE COURT: Okay. I'll take a break now and let the jury out, and you can ask a few questions of the witness outside the presence of the jury and give me a better sense for how anything that he may have to say in response to your questions was previously disclosed in his report and not inconsistent with Judge Lee's ruling.

(End of discussion at sidebar.)

THE COURT: Members of the jury, there are a few more things that the lawyers and I have to talk about before we can continue with Dr. Frank's testimony, so I'm going to ask you to take a break right now for about ten minutes so the lawyers and I can continue to have that conversation, and we'll resume in about 10 minutes. Thank you.

(Jury out.)

THE COURT: I think you can remain seated there, Dr. Frank. Mr. McCoy is going to ask you some questions.

THE WITNESS: Oh, okay.

VOIR DIRE EXAMINATION

BY MR. McCOY:

Q. Dr. Frank -- this is part of the proffer testimony here, Judge, on Helsinki.

Dr. Frank, what is the methodology for attributing causation in a person who has had significant asbestos exposures and who has also smoked cigarettes in terms of your

-- the way that you go about doing it, and what are the sources that you rely upon or point to in doing that?

A. I would like to think I do what every physician does, is start with considering what might be called a differential diagnosis, studying what the diagnosis is, coming to some conclusion as to what the diagnosis is, and then bringing to bear many, many lines of scientific evidence, both independently for asbestos and for cigarette smoking.

The evidence for asbestos and its ability to cause disease, cellular changes, etcetera, would include cell culture studies, organ culture studies, whole animal studies, case reports, case series, human epidemiology, and simply put, the totality of the evidence in all of those areas with regard to the effects of asbestos leads one incontrovertibly to the conclusion that exposure to asbestos has the ability to cause lung cancer.

With regard to cigarette smoking, similarly one looks at the totality of evidence: What are the carcinogens in cigarettes, how have they been testified, have they been tested in cell cultures, in whole animals, in animals forced to breathe cigarettes, and what does the human epidemiology tell us. So all of that is considered.

Then the complication, of course, is when you have multiple exposures is it possible to attribute the disease to one or the other, or if both, to a percentage. And the simple

answer is what science tells us is that the attribution of a particular disease in a given individual must be attributed to all of those prior exposures that had the ability to cause that disease if those exposures can be documented, if they meet appropriateness of dose, and if they meet the appropriateness of latency, and if they meet the appropriateness of cell type.

One also should consider other potential causes for any given individual, and so specifically in the case of Mr. Krik, what I'm aware of is that he had significant exposure to asbestos, he had a significant smoking history, and that at the end of the day science tells me I must attribute his lung cancer to both of those exposures, and science also tells me that I cannot apportion that attribution, but what I can do is characterize, as I did earlier, to a certain extent with the numbers I gave the jury and to the development of lung cancer after cessation of either use of asbestos or the use of cigarettes and what the role might be, but without putting any specific characterization to it.

Q. Now, in terms of the word "attribution," you're talking about the overall cause of the disease, right?

A. I'm interpreting attribution as cause, what caused Mr. Krik's lung cancer, and it's very clear to me what caused his lung cancer, and that is a combination of his exposure to asbestos and his cigarettes smoking.

Q. When you talk about this, is that a scientific methodology

that you're following?

A. Absolutely.

Q. What is --

A. It's the science that every physician uses, and it's also keeping in mind, though I didn't mention it, I used the term Bradford Hill earlier today, or Austin Bradford Hill. He has characteristics that scientists are to consider with regard to being able to link an exposure to an outcome.

And there are nine such criteria. All of them need not be met, but they have to do with such things as did the exposure take place before the disease. The answer to that is yes. Are there -- is it biologically plausible. So when you have something like cigarette smoke with many carcinogens is it plausible it would cause lung cancer; yes. Asbestos causes cancer, again, because of many lines of evidence, so is that biologically plausible. Is there a dose-response relationship. There is for both of these.

And I could go on and on, but one applies what is standard, well-accepted principles of science in reaching such a conclusion.

THE COURT: But is it fair to say, Doctor, that you can't, consistent with the science, in your view, isolate out particular exposures in order to rule in or rule out those particular exposures in isolation as a cause?

THE WITNESS: Science tells us, Your Honor, that if

you have exposure to a carcinogen -- and it is well-accepted that there is no known safe level to carcinogens. And that applies not only to asbestos but radiation. The American Petroleum Institute in 1948 said there is no known safe level of exposure to benzene. It's a principle that applies to cancer-causing agents.

So it's not a question of ruling in or ruling out. It's really a question of ruling in. If the exposure took place, it was part of the cumulative exposure that someone had.

I do understand that there are differences when one looks at it scientifically and perhaps judicially, and I have been doing this long enough to understand some of that, but from a scientific standpoint I have to say to you that if there is exposure to a cancer-causing agent, that becomes part of the totality of the exposure. Some may contribute more, some may contribute less, but they are all part of the exposure.

THE COURT: Thank you.

BY MR. McCOY:

Q. So let's take the statement that, first off, the statement that the cumulative exposure is the cause. That's the statement that you talked about that meets the Bradford Hill criteria.

A. Yes, sir.

Q. Okay. Now, let's deal with the statement that every exposure is a cause. Is that a statement of methodology the

way you would say like for the Bradford Hill, or is that --
A. That's not part of Bradford Hill. It is the cumulative exposure. How one gets there depends on the circumstances.

Mr. Krik smoked two brands of cigarettes. He smoked Pall Malls for awhile, he smoked Marlboros for awhile. Can I rule in one or the other and say one did it and one didn't do it? Of course not.

Similarly, he had multiple exposures to asbestos. Can I rule any of them out as being part of his contributory cumulative exposure? I cannot do that.

Q. All right. So that, again, cumulative exposure is the scientific methodology that meets the Bradford Hill criteria?
A. Right, with the ability that I need to be asked about, can I reasonably say that the kind of exposure he had in other circumstances has caused this disease; we haven't gotten there with perhaps some of the testimony that I might yet give, but for the benefit of the Court, the fact that Mr. Krik has a nonmalignant asbestos disease speaks to a large cumulative exposure and to the fact that he had such disease has been documented in the scientific literature as being predictive of people more likely to get lung cancer from asbestos.
Q. And that's another aspect of how you go about attributing the overall cause?
A. It's part of the totality of reading the scientific literature. And, you know, after 45 years it's thousands and

thousands of articles which I've distilled down as best as I can as a scientist to create what I think is the truth about asbestos science.

Q. Okay. Who else out there says that the cumulative exposure, besides yourself today, is the cause of -- is considered the cause of these types of exposures like asbestos or smoking?

A. Government agencies, the Helsinki criteria, many other scientists. I mean --

Q. What government agencies?

A. IARC, which is a branch of the International Agency for Research on Cancer, part of the World Health Organization that studies these issues; OSHA, that came out as recently as last year saying not only there is no safe level of exposure, but that it speaks to the totality of the exposure giving rise to disease.

Q. You mentioned Helsinki. Is that something that espouses the cumulative exposure as the cause of the disease?

A. Yes. And they come to the documentation of the cumulative exposure by a qualitative description, which is rife throughout this document.

And not only that, they address the subject of attribution to asbestos and cigarette smoking by saying in here, if I can quote: "No attempt has been made in this report to apportion the relative contributions of asbestos exposure

and tobacco smoking because it can't be done."

No attempt was even done to do it because it's not something that science in a rational way can do.

Q. All right. Just stay with my questions for a moment here.

The Helsinki report in this case is Exhibit 306. This was published in 1997, and it was based on what type of scientific process to arrive at this?

A. The consensus document was put together by 19 scientists, all of whom worked in the area of asbestos, who met in Helsinki, created this document, which they again produced by consensus. Between them they had over a thousand publications on the subject of asbestos, and this is that consensus document.

The full document runs about 125 pages, but this is the summary of that. And it discusses all of the diseases that I've talked about earlier -- not all of them. The significant ones that I talked about earlier.

Q. So let me move on from there.

All right. All of their names are listed at the end of the document, right?

A. I'm sorry?

Q. All of their names are listed at the end of the document?

A. Yes, sir.

Q. By Dr. Roggli, R-o-g-g-l-i, he's a witness who now usually testifies for the defense, right?

A. That is accurate.

Q. He's one of the signatories back here, right?

A. Yes, sir.

Q. And it says in the Helsinki document -- and I'm at page 314. I'll put it up on the screen to make it easier for you.

Page 314 of this Helsinki document says: "Estimates of the relative risks for asbestos-associated lung cancer are based on different-sized populations."

Do you agree with that?

A. Yes.

Q. "Because of the high incidence of lung cancer in the general population, it is not possible to prove in precise, deterministic terms that asbestos is the causative factor for an individual patient even when asbestosis is present. However, attribution of causation requires reasonable medical certainty on a probability basis that the agent, asbestos, has caused or materially contributed to the disease."

You agree with that?

A. Yes.

Q. "The likelihood that asbestos exposure has made a substantial contribution increases when the exposure increases."

Do you agree with that?

A. I have been stating that all day under oath.

Q. "Individual exposure on a probability basis should not be

considered the main criteria for the attribution of a substantial contribution by asbestos to lung cancer risk."

Do you agree with that statement?

A. Absolutely.

Q. Okay. Now, what I'd like you to do for us is -- and is it fair to say that the Helsinki document sets forth a methodology for attributing causation?

A. Yes.

Q. And would this -- this part of this document, you agree that that's something you would follow?

A. Yes. That's essentially what I just outlined.

Q. And this consensus statement of the scientists, has it been altered, or changed, or regrouped, by any subsequent document?

A. It's actually just been reaffirmed. They just met again in Helsinki last year, and they basically reaffirmed that approach.

Q. Who is the "they?"

A. Another consensus body. I don't know exactly who was there, but there were another group of scientists in 2014 that revisited this earlier document, and that approach would still be valid.

Q. How do you know that that happened?

A. Because I've seen the document.

Q. Has it been published yet, the document?

A. Yes. It's available online, yes.

Q. And this Helsinki criteria, the summary document, this is published in the peer-reviewed journal, right?
A. Yes.
Q. Can you explain the difference between what you might say, if you did say in a case, that all exposures contribute versus the Helsinki methodology, and what I'm talking about is in the context of a specific individual exposure, that's a conclusion versus a methodology?
A. Well, it's the cumulative exposure and how do you get to the cumulative exposure. It's from the individual exposures that took place over that person's lifetime.
Q. So when you use the term every exposure is a cause, though, I think you said in your deposition earlier in this case that that's the conclusion and not your methodology.
A. That's the conclusion. That's not a methodology, that's a statement of how you get to cumulative.
Q. Okay. So the difference is the cumulative is the methodology that underlies how you attribute causation, whereas the every exposure is just -- is a conclusion that someone else may or may not accept; is that a difference?
A. Correct. And some people, frankly some jurisdictions, specifically do not accept that. That, again, you know, meaning no disrespect to the judiciary, is a judicial conclusion that does not comport with science.
Q. Okay. Let's put that aside for a moment.

THE COURT: That ends up being the wrinkle, right? We have to apply the law to the science in a way that is consistent with the rules of evidence, and I appreciate your adoption of staying in your lane in terms of telling us what the science is and then letting us figure out what we do with the science.

THE WITNESS: And we know the science doesn't vary --

BY MR. McCOY:

Q. Dr. Frank --

A. -- the law varies by jurisdiction.

Q. Dr. Frank, please.

So we know the ruling has been made in this case about that, and we're not -- I'm not here today with you questioning that ruling at the moment. We're accepting that for the moment.

MR. McCOY: And just to be clear, Judge, obviously that's something we disagree with, I'll preserve that disagreement, but let's continue for a moment here.

THE COURT: Let me ask, Mr. McCoy: About how much more proffer do you have?

MR. McCOY: I'm getting near the end. I have just a couple more minutes.

BY MR. McCOY:

Q. I just want to make clear here: When you're not able to say every exposure is a cause, can you still apply the

methodology of the Helsinki and the other organizations you've talked about to come up with a causation opinion when you have specific facts, like we have here, about Mobil Oil and Owens-Illinois Kaylo?

A. Absolutely. My report says that. It says the cumulative exposure. It doesn't say every exposure.

Q. And that's a different statement, is what you're explaining?

A. Yes.

Q. That's what I'm trying to get across.

Now, going to the next set of questions that I would follow based on that: Assume Mr. Krik personally installed or removed and cleaned up over 200 boxes of asbestos-containing block and pipe covering from 1954 to 1960, visible dust is generated from cutting and removing the pipe covering and block with hammers, small -- that the work was done in smaller areas inside ship boilers and compartments, and also to assume the history of smoking a pack and a half of cigarettes in that same time period, assuming that Mr. Krik developed lung cancer in 2008 based on the other medical findings that you've seen about the markers of asbestos exposure in him, and whatever other factors you put in the totality, do you have an opinion as to the cause, as to whether that exposure, that dose, was a cause and a substantial factor in Mr. Krik's lung cancer?

A. I do have an opinion.

Q. What is your opinion?
A. That the exposures as described in that setting and with that material was a substantial contributing cause to his cumulative exposure which is what gave him his lung cancer.
Q. And in terms of the basis for your saying that an exposure of that type of duration, under those conditions, with these markers of disease, are a -- is a substantial contributing cause, what is it -- you already talked about the one day. In addition to the one day, what is the other evidence of exposures of shorter durations that would be relevant to that being a cause?
A. A month or less, doubling the risk of lung cancer.
Q. Any others that you'd like to talk about here? In terms of risk.
A. There, again, are other reports of short-term exposure on the order of a few months. I've certainly seen cases besides what's in the literature of only a few months of exposure giving rise to malignancy. And even the Helsinki criteria speaks to the twofold risk of lung cancer can be achieved with exposures of less than one year. Here we're talking about multiple years.
Q. Now going to the other situation involving Mobil, and again, assuming Mr. Krik worked two to three weeks in small enclosed huts at a Mobil Oil refinery in 1975 and removed, using a hammer, over 150 linear feet of asbestos-containing

pipe covering from a two-inch and three-quarter-inch lines, assume again that same history of cigarette smoking of a pack and a half a day during that time period, and the other information you know about, the markers of asbestos and cigarette smoker, smoking, do you have you have an opinion to a reasonable degree of scientific medical certainty about whether the dose at the Mobil Oil refinery was a substantial factor in causing Mr. Krik's lung cancer?

A. Yes, I have an opinion.

Q. And your opinion on that is what?

A. That the exposure he had to the asbestos at the Mobil facility was a substantial contributing cause to his cumulative exposure which gave him his disease.

Q. And is the basis in terms of the duration and types of activities the same as you've expressed already?

A. Yes, sir.

MR. McCOY: Judge, I think that completes the proffer of evidence or the questions that we would ask should they be allowed to be asked in connection with this case.

THE COURT: Do the defense attorneys want to inquire of the witness with respect to the proffer?

MR. CASMERE: Briefly. We'll obviously incorporate our briefing.

VOIR DIRE EXAMINATION

BY MR. CASMERE:

Q. Doctor, your opinions or your answers to those hypotheticals would be the same if the hypothetical was that he was exposed in that manner on a single occasion, correct?

A. Yes, sir.

Q. And it would be the same as if he was exposed on a single occasion for a minute.

A. I've never run in such a case, I doubt that I would ever get such a case --

Q. But if you did?

A. You know, there are times when you talk about speculation; that is speculative. I would say that exposures above background all contribute to one's cumulative exposure. It is almost inconceivable to me that that would be the reality of a situation. I've never known someone to be exposed for one minute. That's not how the reality of life works.

But the principle of science gets to cumulative exposure -- let's take a similar example. Somebody smokes one brand of cigarettes -- I've been asked this -- for different years, bums a different brand and smokes one cigarette. You may have even asked me this, somebody asked me, many times, would I say that was a significant contributing cause.

I would have to say that it was part of the cumulative exposure. Obviously 40 years and one cigarette are very different. But on the other hand, if there were a million brands of cigarettes, and somebody lit up a different brand

every time, smoked a million cigarettes and got lung cancer, would you say that any one cigarette was not causative or that the cumulative exposure was causative?

So you can't leave out any documentable exposure as exposure as being part of the cumulative exposure. The question is is there such evidence. And we certainly have that, and we don't have it for just a minute here.

Q. That's the beauty of the hypothetical. If the hypothetical was one minute of exposure, your answer would be yes?

A. It would add to the cumulative exposure.

Q. And it would be a substantial contributing factor to that person's ultimate disease?

A. As I understand science, I would have to say yes.

Q. Your opinion is that every exposure above background is a substantial contributing factor to a person's asbestos-related disease?

A. From a scientific standpoint that is what science tells me I have to say, though I've clearly been in situations where courts have ruled that some exposures are considered insubstantial or cases are dismissed because of, you know, a variety of reasons. But science and the law are different, and I have to stick with what science tells me. I'm a scientist. I'm not trained in the law.

Q. And that would be true regardless of the dose, duration, or intensity?

A. If there is documentation above background, it adds to someone's cumulative exposure that they wouldn't have otherwise had.

And just to be clear, background levels are part of someone's cumulative exposure, but I've often testified many times that if that was the only exposure, I would not say that background alone, with a reasonable degree of certainty, was the cause of that person's disease, because it doesn't rise to that level. But when you get exposures above background, it becomes more likely than not, which is the standard as I understand it, that it was contributory.

Q. We all appreciate your candor and your consistency on this issue, Doctor.

The reality is that for you to make an attribution of someone's lung cancer to asbestos, assuming there was proper latency, and assuming that they had a cell type of lung cancer that can be caused by asbestos, you only need two pieces of information. One is that they had the disease, lung cancer of that cell type, and two, that they had some documentable exposure above background?

A. And a proper latency.

Q. I'm sorry?

A. And proper latency.

Q. And a proper latency.

A. And then it becomes reasonable to say that asbestos was a

contributing factor. That doesn't mean that there aren't other contributing factors.

Q. The last thing is: Are you now completely embracing Helsinki and using that as your basis to give causation opinions in asbestos cases?

A. I'm not totally embracing Helsinki. There are statements in here --

THE COURT: I think that's getting a little farther afield than what we need to be covering right now.

Anything from Mobil? Let me ask if Mobil has anything they want to add.

MR. BLACKWELL: A couple questions, Your Honor.

VOIR DIRE EXAMINATION

BY MR. BLACKWELL:

Q. Good afternoon, Dr. Frank.

A. Good afternoon, sir.

Q. Let's talk about the science, just briefly.

Can we agree scientifically that dose and exposure are not the same thing?

A. Absolutely.

Q. Because it's possible to be exposed to a certain quantity of asbestos and not receive a dose of it, at least not a dose that's the same as the exposure?

A. Well, it depends how you define exposure and dose. I have a piece of asbestos in my office, it's in a plastic box tightly

sealed up, so in one sense I'm exposed to it every day, but I get no dose. But if I open that box, then not only would there be an exposure, but some proportion of that would end up being breathed in by me, and it would be a dose.

Q. But you know which proportion, at least something about portions that actually end up in the lungs that are called respirable, don't you?

A. Right. Some fibers are not respirable, some are, but --

Q. There is a size threshold, isn't there?

A. Excuse me?

Q. There is a size threshold.

A. Yes, there is a size threshold.

Q. Is it roughly 10 microns?

A. 10, some fibers up to 15 can get in.

Q. And so when we say 15 microns, 25,400 microns in one inch, right?

A. Something like that.

Q. So if we're talking about what dose of asbestos that somebody got, we're talking about what dose was the respirable portion, true?

A. We are talking about what is respirable. There are other reasons things are not respirable. If the material is in a binder it may be algomerated so that it doesn't get in. Not every fiber that's in the air will end up in people's lungs.

Q. Right. And in terms of the --

A. And we'd never know what the dose is that actually gets into someone.

Q. In terms of the dose that Mr. Krik would have gotten at any work site, and especially Mobil, you don't have any information regarding the dose of exposure from any product and/or how much that dose would have incrementally increased the risk for cancer, do you?

A. I don't have those numbers, and those numbers, if they exist, have not been shown to me.

I believe there is a regulation that requires a measurement of asbestos when it's being used in work places. The workers are not expected to collect that data, that's for the work site to do. So those numbers exist, I'd be happy to look at them, but in the absence of that we go by what the Helsinki criteria says, which is a description or a history of exposure, not that we know the actual number or dose.

Q. Dr. Frank, Helsinki is about the types of exposures that might increase risk, true?

A. And every exposure increases risk; not everybody who is at risk gets the disease.

Q. Sir, I'm asking you specifically about Helsinki, if we could stick with that.

The Helsinki criteria define and speak to which types of exposures increase simply the risk for developing a disease, lung cancer, true?

A. No, it goes beyond that. I mean, Mr. McCoy read: "Cumulative exposure on a probability basis should thus be considered the main criteria for the attribution of a substantial contribution by asbestos to lung cancer risk."

Yes, to risk.

Q. Lung cancer risk.

A. Right.

Q. Is that what you read on the end?

A. Yes, it does talk about risk, and the risk goes up with every exposure, but that doesn't mean everybody gets it.

Q. The last question for you, I want to know if you stand by this statement that you actually gave in this case: Every exposure adds to the risk, and the cumulative exposure from each one is significant in and of itself, but cumulatively they more significantly give somebody the disease when you take into account the sum total. But you say that each and every exposure adds to the risk?

A. That's what I testified to in, what, 2011 when I gave the deposition?

Q. No, I think that was at -- that's right. 2012.

A. 2011.

Q. 2012. You stand by that?

A. I do.

Q. Thank you, Doctor.

THE COURT: Anything further, Mr. McCoy?

FURTHER VOIR DIRE EXAMINATION

BY MR. McCOY:

Q. Dr. Frank, if in this case with Mr. Krik you didn't testify that every exposure is a cause, would that affect your ability to answer the hypotheticals?

A. Not at all.

Q. You could do it without testifying to every exposure or cause?

A. Certainly.

Q. I'm sorry. Your answer was?

A. Yes. Certainly I could do that. I could talk about the cumulative exposure that increased his risk that in his case actually gave him the disease.

MR. McCOY: That's all I have, Judge. I would again tender this evidence either as a proffer or as evidence in this case.

THE COURT: Okay. I'm adhering to my ruling that I articulated at sidebar. I can explicate that further at a later time, but I'd like to just move on.

MR. McCOY: Judge, I would have to say one thing at this point. I mean, I think this issue should be certified to the Seventh Circuit, because this is a long trial, and I just don't think it's something that's worth getting forward on here if we don't have an expert who can testify to causation in a way specific to Mr. Krik. I've got great concerns about it.

I'm happy to go ahead right now with the rest of the examination and we can talk about that later after the jury is gone, so I'm fine to go, but I just want to let you know my very grave concern about what's happened here.

THE COURT: Okay. We can come back --

MR. McCOY: But I appreciate you letting me make the record.

THE COURT: Of course. We can take that issue up at the end of the day as well.

Why don't we resume. Let's get the jury.

MR. CASMERE: Can we have one minute to run to the bathroom, Your Honor?

THE COURT: Sure.

Do you need a break, Dr. Frank?

THE WITNESS: I wouldn't mind.

THE COURT: Go ahead.

THE WITNESS: Thank you, Your Honor.

MR. MORRIS: Five minutes? Less? Two?

(Recess. Jury in.)

THE COURT: Please be seated.

Members of the jury, I'm usually much better at predicting how long our break is going to be, but that one I did not get correct. But we are ready to resume.

Go ahead, Mr. McCoy.

BY MR. McCOY:

Q. Dr. Frank, in the literature that's been published, what period of time does it take for asbestos exposure to cause lung cancer?

A. As little as a month or less in humans has been documented as being able to increase the risk and in some people cause lung cancer.

Q. What publication is that?

A. That is the study of Dr. Selikoff from the UNARCO plant, U-N-A-R-C-O, UNARCO plant in Paterson, New Jersey.

Q. How about is there any exposures in animal studies about how long it takes to cause lung cancer from asbestos?

A. Yes. In animal studies, as little as one day of exposure has been shown to cause lung cancer.

MR. MORRIS: Your Honor, this is cumulative. This has been asked and answered.

MR. McCOY: I'm sorry if I covered something.

THE COURT: I think we did cover this, but you can continue. Go ahead.

BY MR. McCOY:

Q. I don't want to restate something. I lost my -- that in my notes here that we covered that.

So we've covered that, Dr. Frank. Did you need to add anything else on that?

A. No.

Q. Okay. Is it necessary that someone would have a diagnosis

of asbestosis before they could have a lung cancer that's caused by asbestos?

MR. CASMERE: Objection to the extent he's asking the doctor his causation opinion.

THE COURT: That objection is overruled.

BY THE WITNESS:

A. There are differing opinions. The majority opinion is clearly that there's no need to have asbestosis to attribute asbestos as a cause of someone's lung cancer. There are many publications on that and many lines of evidence that would make that not be so.

BY MR. McCOY:

Q. And just to cut through this, you provided me some of the pieces of literature that support that position; is that right?

A. Yes, sir.

Q. Okay. And one of those would be the Selikoff 1968 publication; is that correct?

A. No, that's -- that's the one where he talks about the synergy with smoking. That's not one that addresses that issue.

There's a paper that he wrote -- the first author is Kippen -- showing that you don't need radiologic asbestosis. There's the Markowicz paper we've already talked about from 2013. There's work from Scandinavia from Hillerdal. There's Dr. Roggli who has made that statement in the past, and many

others who have said that asbestosis and lung cancer, in fact, are two separate diseases, which they are. They're caused by two different kinds of cells.

There's no analogy to any other situation where you have to say that you have a nonmalignant disease to attribute a malignant disease. Some people with lung cancers have asbestosis. Some people with asbestosis don't get lung cancer, and some people with lung cancer don't have asbestosis.

Q. Is another example of one of these publications the Banks publication?

A. I'm sorry, who?

Q. The Banks publication? I think it's our Exhibit 311.

A. Banks?

Q. Yes. Lung cancer --

MR. CASMERE: Could I just ask that a year be given with each of these publications, Your Honor?

MR. McCOY: I will, Judge.

THE COURT: Okay. Thank you.

MR. McCOY: I'll give the exhibit number and the year.

BY MR. McCOY:

Q. So --

A. That's not one that I'm immediately familiar with, Banks. If you show it to me or --

MR. McCOY: Banks is 311.

MR. CASMERE: I just want to know if it's before 1958 or after 1958.

MR. McCOY: It's a 2009 publication.

BY MR. McCOY:

Q. I'll give you a copy.

A. Oh, I don't know it under the author's name because it's, again, a consensus document.

I know it is-- here, I have that. It's a consensus document, not -- I know it as that. I don't know it as the first author.

Q. So that's one of the ones that supports --

A. Oh, absolutely.

Q. -- that you don't need asbestosis?

Okay. How about the Cullen article in --

A. The Cullen article, the Finkelstein article, Hillerdal, I mean, there's just a lot of such articles. There was actually a series of commentaries about eight -- 1987 in the International -- American Journal of Industrial Medicine that Dr. Selikoff was editor of. He asked for people to comment on that subject, and I think there was one that said you needed to have asbestosis. Everybody else pretty much said no.

There was some confusion. The earliest cases of lung cancer seen in people exposed to asbestos were all in workers who had a lot of exposure. So they had asbestosis and lung cancer. So some people thought, well, you had to have one to

have the other. But clearly there's many lines of evidence since then that that's not the case.

Q. Okay. The Cullen publication was 2005 --

A. Yes.

Q. -- that we mentioned? That's our Exhibit 326.

How about the American Thoracic Society publication in, I think it's 2003?

A. Right. That's another one, the diagnosis and initial management of nonmalignant diseases related to asbestos.

Q. All right. Let's change topics for a moment.

Do persons who lived in their fifties -- into their fifties or sixties or seventies have asbestos fibers in their lungs even if they did not work in industrial settings?

A. Yes.

Q. And how many do those persons have compared to people in industrial settings?

A. Far less.

Q. If in the lung tissue of Mr. Krik there wasn't any reported asbestos fibers, does that mean he could not have a diagnosis of an asbestos-related disease?

A. No, it does not. As I mentioned very early today, there are different kinds of asbestos. One of the fiber types, chrysotile, the most common one, the one that Mr. Krik clearly had exposure to, does not stay in the lungs very long. It -- what we call half life, half of it disappears on the order of

about 90 days. The amphiboles, the other types, stay around for two or three years.

So if he stopped being exposed in 1982 and he had his lung out in 2008, a lot of that asbestos would have disappeared. And it also depends on which laboratory does the testing. There's no standard methodology for the testing of asbestos. And some labs, in my opinion, are reliable, and some labs are totally unreliable because of the techniques they use.

So I don't know if he had such a testing done, but just the fact that somebody says they didn't find asbestos doesn't really mean anything. Again, the much more important criteria is a history of exposure, not what you find in the lung.

Q. Are you familiar with something along the lines of a standard of 5 million particles per cubic foot in asbestos cases?

A. Yes, it's --

MR. CASMERE: Objection, Your Honor. This is beyond the scope of the witness' Rule 26.

THE COURT REPORTER: I'm sorry?

MR. CASMERE: This is industrial hygiene. This is beyond the scope of the witness' Rule 26.

MR. McCOY: He can say he knows about it.

THE COURT: Right. I'll let the witness answer this question but --

BY THE WITNESS:

A. Yes, I know about it. As an occupational physician, that's the kind of thing you learn.

BY MR. McCOY:

Q. And this was a standard that was in place back in the 1940s and '50s? Is that where you have learned about it?

A. In some places, it was a standard. In some places, it was a recommendation. There were no federal government uniform standards before OSHA, which was 1992 when they started putting standards that were universal for the United States in place.

So some jurisdictions had standards that they adopted. Some simply went by recommendations, and the recommendations came from an organization called the ACGIH, American Conference of Governmental Industrial Hygienists.

Q. So from your perspective as an occupational physician, based on your knowledge and history, and was that a standard or a guideline, the 5 million particles per cubic foot, that was intended to protect persons from getting cancer?

A. No, it was not.

Q. Does it -- in terms of asbestos diseases, does it take more or less or what's the comparison between asbestosis to get that disease and lung cancer?

A. It takes far more asbestos to develop asbestosis or pleural plaques. There's actually something we call "the threshold." You have to pass a certain amount before you'll see those.

That's not true for cancer where even, as we've already talked, very small amounts can cause cancer. And that 5 million particles number was never intended to protect against cancer.

Q. Charles Krik has not had any lung cancer recurrence since that lung removal operation in 2008. Does that mean he's forever cured of lung cancer?

A. No, it doesn't mean he's forever cured. He's obviously doing very well. It's a long period of time. But five-year survival is generally less than 15 percent or about 15 percent. He's managed to get past five years. He hasn't yet gotten to ten years, so we don't quite know what the future will bring.

But he had an early stage, and he's obviously doing well. With regard to his cancer, though, it clearly has compromised his breathing.

Q. Is someone who has developed one asbestos-related cancer any more likely to develop mesothelioma than would persons in the general population?

MR. CASMERE: Objection, Your Honor. This is beyond the scope. This is also a Rule 26.

THE COURT: That objection is sustained.

BY MR. McCOY:

Q. If the life expectancy charts that the U.S. Government puts out -- you are familiar with those, right?

A. Yes.

Q. Okay. If those charts showed that Mr. Krik had 9.6 years to live based on his current age, is there any reason to believe that he would -- his situation would be different based on his medical records?

A. I think so, yes.

Q. And what would be the difference?

A. Given that he's had lung removal, that he's on chronic oxygen, I think that would be very optimistic to think that he would still be with us on the average of 9.6 years.

Q. If Mr. Krik quit smoking in 1982, 26 years before he got the cancer, does that time gap there make it more or less likely that he would develop the lung cancer?

A. It would have made it far less likely that he would have developed lung cancer, but it wouldn't have eliminated the totality of his risk, for two reasons. One, it wasn't yet long enough to say that there was no role of his smoking; and secondly, no matter how long he would have given up cigarettes, the fact that he'd been exposed to asbestos would have put him at an increased risk.

There's scientific evidence that if you work with asbestos and give up cigarette smoking -- Selikoff showed this; Markowicz has shown it in his papers -- if you give up smoking, the longer you give up smoking, the lower your risk of developing lung cancer becomes. However, for those people that have had exposure to asbestos, you do not go down as much as

someone who only smoked and gave it up. You go back to what's essentially the baseline of just asbestos exposure.

So you can give up cigarettes. He did. It lowered his risk, but he still had the existing risk of his prior exposures to asbestos.

Q. Have you studied a couple other papers on this just to --

A. I've studied many papers on this and a lot of things.

Q. The paper by Peto?

A. Yes.

Q. That's -- let's see the date. This is a 19 -- well, it's 2000.

A. That's another paper that speaks to the reduction in risk of getting lung cancer with a reduction in smoking after asbestos exposure.

MR. McCOY: Dr. Frank, I've gone through those notes of mine here, and I think that's all the questions I've got for you now. Thank you.

THE WITNESS: You're very welcome.

THE COURT: For the defense?

MR. CASMERE: Good afternoon.

CROSS-EXAMINATION

BY MR. CASMERE:

Q. Good afternoon, Dr. Frank.

A. Good afternoon.

Q. Welcome to Chicago.

A. Thank you. It's a nice city.
Q. Thanks for coming. Do you mind if I ask you a few questions?
A. That's why I'm here.
Q. Okay. You never looked at any of Mr. Krik's x-rays?
A. No.
Q. You never looked at any of Mr. Krik's CT scans?
A. Correct.
Q. You never looked at any of Mr. Krik's PET scans?
A. Correct.
Q. You never looked at any tissue taken from Mr. Krik?
A. I'm not a pathologist. I wouldn't know how to interpret the tissue.
Q. You're --
A. I have to rely on the pathologist's report.
Q. You're not a radiologist either?
A. I'm not a radiologist.
Q. There's actually a test you can take to interpret B -- x-rays to give an occupational disease opinion under the NIOSH B-reader program, right?
A. Something called a B-reader exam. I took it once in 1983. Half the doctors like myself don't pass it when they first take it. I never took it again.

I've published in the peer-reviewed literature on reading x-rays, but I'm not a B-reader.

Q. You took it and failed it?
A. Yes.
Q. You're not a treating physician for Mr. Krik?
A. I am not.
Q. You do not feel that you have a physician-patient relationship with him?
A. I do not.
Q. You never talked to him, have you?
A. I have. I talked to him earlier today when I first met him.
Q. Before today, you never talked to him?
A. Before today, I had not. I had read his depositions, so he spoke to me about his case but through paper.
Q. You've never talked to any of his treating physicians?
A. No.
Q. You play no role whatsoever in his treatment or his diagnosis from a standpoint of his treating physicians?
A. As you just pointed out, I'm not one of his treating physicians.
Q. Your only role here is that Mr. McCoy has hired you to give expert opinions?
A. Yes, sir.
Q. In order to do that, they gave you about 100 pages of medical records, right?
A. I forget how many. They gave me medical records, which I

reviewed.

Q. Do you have your file up here that was marked at your deposition?

A. Maybe. I have my deposition transcript.

MR. CASMERE: May I approach, Your Honor?

THE COURT: You may.

BY MR. CASMERE:

Q. Dr. Frank, I've handed you what was marked as Exhibit, I think, 6 to your deposition, which I believe was your file that you had on Mr. Krik?

A. I believe it was also.

Q. The last half of that file is the deposition transcripts of Mr. Krik, right?

A. Yes, sir.

Q. The first half is some medical records --

A. Medical records, yes.

Q. -- that were provided to you by Mr. McCoy?

A. Yes.

Q. I tabbed one in there.

A. Yes, sir.

Q. That's a medical record about a report from a doctor in October of 1997, right?

A. Yes.

Q. And in that report, that doctor says that Mr. Krik told him he was exposed to asbestos as recently as two days ago, right?

A. The record speaks for itself.
Q. Is that what it says?
A. I'll read the sentence. It may or may not be true, but this is what it says. "He indicates that he's been exposed to asbestos as recently as two days ago."
Q. And that was written in October of 1997?
A. It was.
Q. You can close that.
A. Could I have the rubber band so it doesn't go flying all over?

MR. CASMERE: Yes. May I?

THE WITNESS: You can have it back even.

MR. CASMERE: I'll take it. Teamwork.

BY MR. CASMERE:
Q. Asbestos diseases of the lungs are permanent, right?
A. Not all of them. Most of them.
Q. Which ones aren't permanent?
A. Benign asbestotic pleural effusions. They come; they go; they can come back.
Q. The pleura is the saran wrap that you described, right?
A. Yes, sir.
Q. That's not the lung tissue?
A. No.
Q. What you just said is not permanent are effusion which are liquid that fills into that pleural space, right?

A. Caused by irritation of the pleura.
Q. And then it can go away?
A. It can.
Q. That type of irritation is also caused by a lot of things other than asbestos?
A. Yes.
Q. But the plaque, pleural plaque, once --
A. That's permanent.
Q. -- it's there, it doesn't go away?
A. That's permanent.
Q. Asbestosis, the scarring of the lungs, once it's there, it doesn't go away, right?
A. Correct.
Q. Mr. McCoy showed you some medical records. I'd like to do some of that as well. I want to show you this one that Mr. McCoy showed you, which was Krik No. 5.
A. Correct.
Q. And you talked about the emphysema that was seen in this chest x-ray dated January 20, 2003, right?
A. Yes.
Q. That is five-and-a-half years before he was diagnosed with lung cancer?
A. Yes.
Q. Is there a report in there -- there's no report in there that says he has asbestosis?

A. It does not say that.
Q. There's no report in there that says that they see pleural plaque?
A. Not on that report.
Q. Asbestos-related scarring, the asbestosis is usually bilateral on both lungs, right?
A. So I earlier testified.
Q. Because when the asbestos goes in, it doesn't decide to go left or right; it goes both places?
A. Correct.
Q. So when you usually see asbestosis, it's bilateral?
A. Yes.
Q. When you usually see asbestos-related pleural plaques, it's bilateral?
A. Yes.
Q. Scarring of the lungs from asbestos is -- you said it was collagen that was sort of built up around the gas exchange area?
A. There's a cell called "the fiber blasts," and it -- it turns on other cells to produce collagen, which is what's the scar tissue.

It's not very different if you cut yourself in the kitchen with the knife and you get a little scab there. It's the same kind of tissue. It falls off on the skin, leaving you with normal skin, but once it occurs in the lung, it's

permanent.
Q. It actually adds more tissue to the area?
A. Yes.
Q. And that's the scarring?
A. Yes.
Q. Atelectasis is actually the collapse of the lung space, right?
A. So I testified earlier.
Q. It's totally different than asbestosis?
A. Yes.
Q. And there's something called discoid atelectasis, which people will see on an x-ray where there's a collapse of the lung, and the x-ray it looks like a disc because of the shape or the angle at which they take the picture, right?
A. That's how it gets the name.
Q. Right. So you agree with me that no asbestosis and no pleural plaques as of January 20th, 2003, per this x-ray?
A. That one report makes no such documentation.
Q. The next one he showed you was Exhibit 4, September 21, 2004, right?
A. Yes.
Q. Right here, this linear fibrotic strands in the lung bases?
A. Yes.
Q. That's also a way to describe atelectasis, correct?
A. No. Fibrotic means scar tissue. Atelectasis, as you

pointed out, is a collapse. They look the same, but you wouldn't use the term "fibrotic" to describe atelectasis.

Q. If you looked at -- if the radiologist looked at it and thought it was scar tissue, they would say fibrosis; if they thought it was atelectasis, they would say that --

A. That's right.

Q. -- depending on their interpretation?

A. Exactly.

Q. Right. But if it's a scarring, it doesn't go away?

A. That would be true.

Q. This pleural thickening, that's what you talked about where the pleura can be inflamed from something like an effusion or something else, right?

A. Well, I didn't say -- there are things that will give you a thickened pleura. Some infections will do it. Trauma will do it. But bilaterally, it's usually asbestos.

Q. Pneumonia will do it?

A. It can, but usually on one side, and it's very rare.

Q. But if it's asbestos-related pleural thickening, it doesn't disappear? Do you agree with that?

A. Usually not, and we have pathologic evidence that it's actually there.

Q. My question was, does it disappear if it's asbestos related?

A. No.

Q. Now I want to show you a record that he didn't show you, Owens-Illinois 1018.

MR. CASMERE: May I approach, Your Honor?

THE COURT: You may.

BY MR. CASMERE:

Q. I'll give you one.

A. Thank you.

Q. This is a CT scan report from February 2005, correct?

A. Yes.

Q. That is a little more than three years before he was diagnosed with lung cancer, correct?

A. Yes.

Q. The CT scan of the chest was done with one millimeter cuts --

A. Yes.

Q. -- correct? Is that correct?

A. That's what it says.

Q. The examination shows hyperaeration of the lungs consistent with a chronic obstructive lung change -- changes. There was a nodule at the left lung base approximately 8 millimeters in size. It has two to three lucent centers adjacent to it and within it. They are unlikely, therefore, to be malignancy. There is probable scar tissue or dilated bronchi adjacent to each other. Most likely bronchiectasis.

Bronchiectasis, that's not asbestosis?

A. No.

Q. Other bronchi throughout the lower lobes do not show dilation, but they do have slightly thickened walls consistent chronic bronchitis.

That's one form of COPD, correct?

A. Right.

Q. There are no pleural plaques or pleural calcifications or diaphragmatic calcifications as seen in asbestos exposure, correct?

A. That's what it says.

Q. Under the impressions, the findings are consistent with chronic obstructive lung changes and some mild chronic bronchitis. Nodule at the left lung base, probably area of bronchiectasis, although scar tissue from previous inflammatory process could produce these findings.

Number two, the larger area of interstitial change -- the interstitial is the working tissue of the lung, right?

A. Yes.

Q. Interstitial in the lingula consistent --

A. Lingula.

Q. I'm sorry?

A. Lingula.

Q. I knew I couldn't make it through this without mispronouncing one of these.

-- the lingula --

A. Right.
Q. -- consistent with scar tissue. Similar changes were seen on the chest film of 2003. No pleural masses or plaques or thickening or calcifications are seen as in asbestosis. The lung findings are therefore nonspecific and could be due to any cause of chronic bronchitis, bronchiectasis, or chronic obstructive lung disease, correct?
A. Yes.
Q. I want to show you another record that I don't believe you were shown this morning. This is Owens-Illinois 343-A. It is also Plaintiff's No. 11.

It is -- can you see that okay, Doctor?

A. I do.
Q. It is a chest x-ray report from November 12, 2008, correct?
A. Yes.
Q. That's right around the time when he's having his surgery?
A. Yes, that's the admission on which he had his surgery.
Q. Right. I highlighted something on here. The lungs are otherwise clear, and therefore, no pleural effusions, right?
A. That's what it says.
Q. Is there any notation on here of asbestosis?
A. No, there was never a notation on any x-ray of asbestosis.
Q. You agree that Mr. Krik does not have the disease asbestosis?
A. If you read my report, I did not say that he had

asbestosis. It never says that in my report. I never agreed that he did. I wrote that I believed he had asbestos-related pleural disease or pleural asbestosis.

Q. You agree that he does not have asbestosis?

A. He does not have parenchyma asbestosis. I -- the possibility exists, but it didn't rise to a level of certainty that I wrote it in my report.

Q. And it's not in any of the chest x-rays or CTs I've showed you so far in my cross-examination, right?

A. Correct.

MR. CASMERE: Your Honor, consistent with the other records, I would move for admission of 343-A and 1018.

MR. McCOY: No objection, Judge.

THE COURT: They're admitted.

(Owens-Illinois 343-A and 1018 received in evidence.)

BY MR. CASMERE:

Q. One more, Doctor. Owens-Illinois 618, is it okay with you, Doctor, if I just put it on the screen?

A. Sure.

Q. This is a chest CT from June 19, 2013, correct?

A. Correct.

Q. That is several years after his lung cancer diagnosis and after his surgery, correct?

A. Yes.

Q. The findings: Previously seen reticular nodular densities

in both lungs, especially the right, have resolved, correct?
A. That's what it says.
Q. Later on I highlight: There is some emphysema change in both upper lungs, correct?
A. That's what it says.
Q. No diagnosis of asbestosis, no diagnosis of pleural plaques, correct?
A. No, there's no comment on the pleura at all, so you don't know what the radiologist thought, saw, or included in what he thought was important.

Follow-up for lung cancer, which is why he was asked to look at the x-ray, does not imply that he should necessarily -- I would think he should, but they don't always report on the pleura.

Q. Does he report --
A. He does not.
Q. -- pleural plaques?

Did you look at this x-ray?

A. I did not.

MR. CASMERE: I move for admission of 618.

THE COURT: Any objection?

MR. McCOY: No objection.

THE COURT: It's admitted.

(Owens-Illinois 618 received in evidence.)

BY MR. CASMERE:

Q. You talked about cigarettes a little bit. You said 30 to 40 carcinogens in cigarettes. It's actually about 69 or 70, correct?

A. It depends who you read. It varies, but there's certainly many of them, dozens. How's that?

Q. I told the jury yesterday morning there were 69. Would you quibble with that?

A. I don't recall exactly that number. I've got a book at home on lung cancer and cigarette smoking that talks about 36 or 40. You know, it's all in the same ballpark. There's a lot of different cancer-causing agents in cigarettes.

Q. Well, I want to make sure that no one accuses me of saying something to the jury that's not true.

So do you know what the Surgeon General says about how many --

MR. McCOY: I object. It's argumentative.

THE COURT: The objection to the form of the question, to the extent it wasn't even a question, it was just a statement, is sustained.

BY MR. CASMERE:

Q. Do you know what the Surgeon General says about how many carcinogens there are in cigarettes?

A. Specifically, no.

Q. Would you dispute the fact that they say that there's 69 or

70?

A. No.

Q. Okay. Half a pack of cigarettes a day, every day for 30 years would be a 45-pack-a-year smoking history, right?

A. Half a pack a day?

Q. I'm sorry.

A. A pack and a half a day would be.

Q. A pack and a half a day --

A. Yes.

Q. -- every day for 30 years, that would be 45 --

A. Right, the math was wrong the first time. You got it right now.

Q. Math was never my strong suit.

You would consider that a significant smoking history?

A. Yes.

Q. Do you agree with the Surgeon General in terms of the fact that about half a million Americans will be -- will die because of smoking this year?

A. Yes.

Q. And that's roughly about 1,300 a day or 1 every minute, right?

A. Cigarette smoking is the largest contributor to death in the United States, because more people smoke compared to the other exposures that people get.

Q. So it's about 1,300 people a day, you agree?
A. I didn't do the math. I'll trust that you got it right.
Q. Thank you. Even though we just established my math is not my strong suit, you trust me on that.

You were asked about the life expectancy charts?

A. Yes.
Q. Some of the other things that impact Mr. Krik's life expectancy would be his COPD?
A. Yes.
Q. His history of high blood pressure?
A. Not if it's well controlled.
Q. How about coronary artery disease?
A. It depends if it's controlled or not and if he's having symptoms.
Q. There are other conditions that he has that are completely unrelated to smoking or asbestos that may impact his life expectancy in a negative way, correct?
A. Which ones are you thinking about? Heart disease is related to smoking. What other ones are you thinking about?
Q. Are -- do people who are above the average body weight, are they expected to life as long as people who are at the average body weight?
A. It depends on how much above. I'm overweight. He's a bit -- he could do like I could with losing a few pounds, but he's probably more sedentary than he used to be.

Q. Does a history of having prior cancers impact your life expectancy as well?

A. It depends on what kind of cancer and what his status is. You know, he seems to be cured of his penile cancer, and he's done very well with his lung cancer.

You know, I think it's probably less likely than more likely that it will be the cause of his death ultimately.

Q. Now, you've called yourself an academic physician, right?

A. Yes.

Q. You don't really see patients that much anymore, correct?

A. Not anymore. I've certainly seen patients all my life. I still do clinical research. I still evaluate records. I consult with colleagues, but I don't see a lot of patients.

My home base, if you will, is at a school of public health even though I'm also a professor of medicine, but I get paid to do the public health side of things.

Q. You've seen in the last ten years, average, about one or two patients a year?

A. That's probably about right.

Q. You said that there were no federal regulations that adopted the threshold limit values before OSHA?

A. Not that I'm aware of.

Q. The Navy adopted the threshold limit values when they adopted the Walsh-Healey Act in the 1950s, correct?

A. Yes, but I don't think of that as federal regulations that

apply to all the states.
Q. It certainly applied to the Navy?
A. It applied to the Navy.
Q. You mentioned that you worked for the company that manufactured Kaylo?
A. Yes.
Q. That's Owens-Corning Fiberglas?
A. Yes.
Q. You never worked for Owens-Illinois?
A. No, I can't -- you know, it was either an O-I or O-C lawyer that hired me to testify on behalf of the company. And I was sitting here trying to remember was it O-I or O-C, and I just can't remember.

I mean, the product was made and used -- it was made by one company and used by another, and then they bought the first one, I understand.
Q. You've talked about this -- the idea that the threshold limit value was not designed to protect against cancer.

There was a thought that was well published in the 1950s that if you protected against asbestosis, you would protect against cancer, correct?
A. I'm not aware that that necessarily was the case. What I remember is Herb Stokinger, who eventually ended up working for NIOSH, who in 1956 wrote that the levels of protection were designed for asbestosis and that if you were going to protect

for cancer -- and he wrote this in 1956 -- the levels should be 100 to 500 times lower. That's what I recall from that era.

Q. You talk about Dr. Hueper?

A. No. Dr. Stokinger.

Q. No, no. In the direct examination, you mentioned Dr. Hueper --

A. I did talk about Dr. Hueper. He wrote a book in 1942 calling asbestos the carcinogen for the lung.

Q. He also published articles in the 1950s and the 1960s --

A. He did.

Q. -- that said asbestosis was a prerequisite to getting lung cancer, correct?

A. He did write that, because the cases that he saw back in the '40s all had asbestosis.

Q. But he published in the literature, as did others, that asbestosis was a prerequisite to getting lung cancer, at least at that time in the '50s and '60s, correct?

A. Right, that's what he wrote. And he turned out to be wrong.

Q. Now, you also mentioned Dr. Roggli --

A. Yes.

Q. -- and this question about asbestosis?

You're familiar with Dr. Roggli's textbook?

A. Yes. I get shown it a lot by folks like yourself.

Q. People like me, right.

You're familiar with his position on whether you need asbestosis as a prerequisite to getting lung cancer, right?

A. Sure, I'm aware of his old position, and I'm aware of his new position. His old position in about 1990 was you didn't need it. Now he says you need it.

Q. You certainly respect Dr. Roggli?

A. Not especially, no.

Q. But you certainly would acknowledge that he has a textbook on asbestosis-associated diseases, right?

A. You can have a textbook. That doesn't mean you earned someone's respect.

Q. Has he testified for plaintiffs in this litigation?

A. In the past, he did some. He predominantly now testifies for defendants, and he -- I'll just leave it at that.

Q. Okay. You're aware that in his textbook -- well, strike that. We'll leave Dr. Roggli alone.

You mentioned Dr. Selikoff and Dr. Markowicz and their publications on this, quote/unquote, "synergy," right?

A. Yes.

Q. And the --

A. And the Surgeon General.

Q. The chart that you were shown by Mr. McCoy was this one?

A. Yes.

Q. All right. Now, first of all, Dr. Markowicz couldn't get the same numbers that Dr. Selikoff got, right?

A. He wasn't looking at the exact same population. These were the survivors who lived a lot longer than the insulators who died earlier. It's a different group.

Q. Well, he looked at the same group of insulators, but he looked at that group and the people who died from 1981 through 2008?

A. And Selikoff looked at them from about 1960 -- the early '60s to '91. So there's a little bit of overlap. But the ones that died earlier of lung cancer, perhaps, are not the same ones that died later of lung cancer or other things.

Q. But it's the same cohort of insulators --

A. It's the same group, but there's -- you know, just like there is something called the healthy worker effect, the people who work are generally healthier than people who don't work, there are survivors and cohorts who end up having a different experience than the rest of the cohort.

Q. But these --

A. But it is the same -- it's originally the same group.

Q. But these weren't healthy workers. This was a mortality study. These were gentlemen that passed away?

A. Right, there were 2,200-and-70-some-odd deaths.

Q. And what Dr. Markowicz actually found was that for the group of people who had asbestos exposure but supposedly no asbestosis, that their risk was 3.6, right?

A. I'd have to look at the numbers.

Q. I have it for you.
A. Yeah, I mean, they had an elevated risk compared to nonsmoking/nonasbestos workers.
Thank you.
Q. I handed you Owens-Illinois Exhibit 46 for identification, Doctor. This is the study we're talking about?
A. Okay.
Q. So if you turn to the -- it's page 93.
A. Page?
Q. In the upper right-hand corner, it's got the bar charts?
A. Yes.
Q. This is what we're looking at. What he found is this group of people without asbestosis but the insulators had an increased risk of 3.6, correct?
A. So they had a three-and-a-half times increased risk with asbestos exposure without asbestosis. Just from asbestos.
Q. That's what he says there, right?
A. Right.
Q. And he uses as the risk for smoking a modified CPS II, which is the Cancer Prevention Study II number, of 10.3, correct?
A. Right, the earlier Selikoff paper had 10.6. This is essentially the same but obviously slightly different.
Q. But the actual Cancer Prevention Study number is about 23 times, but they did a subsection of that for this study,

correct?
A. Well, the 23 times is, I think, for a two-pack-a-day smoker.
Q. And the current Surgeon General number is about 25 times for that?
A. Again, I think for that level of smoker.
Q. So what he found -- what he used is that for smoking, the insulators, because these are all insulators, right, the risk from smoking was 10.3, but for the insulators without asbestosis and who didn't smoke or didn't smoke regularly, their risk was 3.6?
A. It's three-and-a-half times more than somebody without either exposure showing that --
Q. And smoking was three and a half -- was almost three times that of the asbestos exposure, right?
A. About that.
Q. Okay. And then over here, he has insulators without asbestosis --
A. Right.
Q. -- but who were smokers, and they are 14.4, right?
A. Right.
Q. So 10.3 and 3 -- it's barely additive, correct?
A. Yes.
Q. And so even in this group of smokers who were insulators, union insulators, their combined risk was 14.4, and it was only

10 if they were just a smoker, and it was only 3.6 if they were a smoker or exposed to asbestos but not a smoker, right?

A. That's what that number would tell you.

Q. So two-thirds of their risk is from smoking; one-third is from the asbestos exposure, right?

A. That is one way to interpret that.

Q. And he didn't get a multiplicative or even a supra-additive; it's barely additive, right?

A. Well, if you look at the other data, some of it was multiplicative or supra-additive, not for that specific group.

Q. But these are supposedly gentlemen who do not have asbestosis, right? The people who have asbestosis, they're in a completely different category?

A. They have a different set of numbers.

Q. Right. With asbestosis, they're way up here, right?

A. Right.

Q. Now, Mr. Krik would never be accepted to be in this cohort because he's not a union insulator, right?

A. No, he was a boilermaker.

Q. So he would not be accepted to be in this cohort?

A. It's a different group.

Q. So he would not be accepted --

A. He's not a member of this union, so he was not part of that cohort.

Q. Okay. And he couldn't get in -- if it was an academic

study, they wouldn't let him in? That's how epidemiology works, right?

A. Right, I mean, if you're studying insulators, he's not an insulator. He wouldn't be part of the group. That's pretty self-evident.

Q. So in 2013, Dr. Markowicz looked at the same group of people. He couldn't come up with the same numbers as Dr. Selikoff, and he also said that there were some serious limitations with his study, right?

A. Right.

Q. Now, Dr. Markowicz is a gentleman who, like you, testifies for plaintiffs in asbestos litigation?

A. Yes.

Q. Can you show me in his article where he disclosed that?

A. It may not be here. It depends on what the journal requests of the authors.

Q. Don't you think that that's something that should be in a peer-reviewed published literature is a disclosure --

A. Wait, wait, wait, wait. Okay. It doesn't say it here, but it does say -- and let's be fair to him -- "Author disclosures are available with the text of this article at www.atsjournals.org."

So if you've printed that out, I presume you'll find that he said that he testified for plaintiffs.

Q. You think that's what he would have said, right?

A. I would have thought. Now, if you have it and you can show it to me and he doesn't, you know, then you have to ask him why it's not there.

I put down on the articles now that I publish that have to do with asbestos, where it's appropriate, not like in a textbook because that's a different kind of setting, that I testify primarily for plaintiffs.

Q. But you haven't looked at that website to see --

A. I did not look at the website.

Q. Okay.

A. But I know Dr. Markowicz, and I know that's what he does. So I take that into account when I look at his data.

Q. Now, a couple of things that he noted about the notable limitations of his study, it's on page 94, Doctor, right-hand column, bottom right.

A. Okay.

Q. He says that this study has some notable limitations, smoking status, and then the second one is a misclassification of asbestosis, right?

A. That's what it says.

Q. And if you look at the front of the article, what they did was is they looked at the smoking status between 1981 and 1983, and then they stopped, right?

A. That's the only data they had.

Q. And they looked at the asbestosis data from looking at

x-rays from 1981 to 1983, and then they stopped?
A. That's the data they had.
Q. And they didn't look for anything after 1983 for smoking or x-ray changes or pathological changes to see if these people actually had asbestosis?
A. The study that they carried out was a death certificate study. They didn't go back and examine those individuals as we had done for decades with Dr. Selikoff, that's correct.
Q. And Dr. Kippen in 1987 went back and looked at Dr. Selikoff's cohort, and what he found was that when they looked at the pathology of those insulators that they thought did not have asbestosis on x-rays --
A. They had it pathologically.
Q. -- they had it pathologically, right?
A. Right.
Q. A hundred percent?
A. Well, they didn't have everybody's case, but the ones they had, yes.
Q. Right.
A. But radiologically, it was absent.
Q. That was published in 1987, knowing that you can't rely just on those x-rays for this group of insulators; you got to look at their pathology to determine if they have asbestosis?
A. If you've got pathology. You don't go around taking tissue out of people to carry out your studies. When they did have

tissue, they looked at it, just as they looked at Mr. Krik's tissue when he had his lung out.

Q. And this column right here, that's based on seven people in this study?

A. Okay. That's because most insulators ended up with asbestosis.

Q. If these people -- if a couple of these individuals actually ended up having asbestosis, if they would have looked at their pathology a couple years later, they wouldn't be in this column; they'd be over here in the asbestosis column?

A. We could speculate about all kinds of things, if, if, but I don't know. But --

Q. But --

A. -- if that would be the case -- and, again, they say, you know, it could be misclassified. Some others may deserve to go back the other way, too. So the data is what the data is.

Q. And the point is, is that if these numbers are wrong, this number is wrong; and if it's lower, this number is lower, right?

A. Right. If it's wrong.

Q. If it's wrong?

A. I don't know that it's wrong.

Q. And if the smoking numbers actually should be higher, maybe at 15 or 25, right?

A. We could speculate all you want.

THE COURT: Dr. Frank, as tempting as it is to take issue with the way the question may be asked, it's better off -- we're all better off if you just answer the question.

THE WITNESS: Okay. Yes, your Honor.

THE COURT: If there's an issue that needs clarification, another lawyer can ask clarification questions.

THE WITNESS: Okay.

THE COURT: But to make the examination go a little bit more smoothly --

THE WITNESS: Yes, sir.

THE COURT: -- take the question that's being asked of you and just answer the question.

BY MR. CASMERE:

Q. And one other thing on this Markowicz study, they exempted that study from review by the institutional review boards at Mount Sinai and at Queens College, correct?

A. That's what it says.

Q. Going back here, to be fair to me, for somebody who doesn't have asbestosis in the Markowicz column, that number is 14.4? It's right here, right?

A. For those seven patients, yes.

Q. But when we're looking at this chart, to look at this supposed synergistic risk of lung cancer, if you're looking at somebody who smoked but didn't have asbestosis, that number is right about here, fair?

A. Fair.

Q. It's a good sign my turning the pages like this.

I want to talk to you about your report for a minute. Your report in this case was dated September 16, 2011, correct?

A. Yes, sir.

Q. Do you know how many reports you authored on that day?

A. On that day? No.

Q. I'm going to hand you --

A. Well, I didn't author them on that day. That's the day that they were finalized and typed. So there probably were a number of them, because they usually get done in batches.

Q. I'm going to hand you Owens-Illinois 1025, Doctor.

A. Okay.

Q. If you include Mr. Krik's report, September 16, 2011, you authored an additional 11 reports to Mr. -- the Cascino Vaughan law firm on that day, September 16th, 2011?

A. I didn't author them on that day. That was the day they were approved for final signature.

Q. Well, you have 12 reports from September 16th, 2011 --

A. Which means --

Q. -- that go the Cascino Vaughan law firm?

A. -- Mr. McCoy's office got back to me and said these reports are okay to be signed off on.

MR. McCOY: Rule 26 objection on this.

THE COURT: That objection is overruled.

MR. McCOY: Judge, may I be heard on that briefly?

THE COURT: Sure.

(Proceedings at sidebar on the record.)

THE COURT: Mr. McCoy.

MR. McCOY: Judge, my objection is that this violates the confidentiality privilege and Rule 26 about communications with retained experts. The report -- they can inquire about the report, but they can't inquire about all these communications, especially when they're getting into cases in other courts now.

It may be these reports were prepared for a long period of time, but this requires a lot -- this is why that privilege is there, and this is a classic example of inquiring into that communications with retained expert.

They can ask about the final study but not all this other stuff, especially when you get into other cases like this. Because like I said, as he's trying to explain, he worked on these over a long period of time. That's the day my firm said, "Okay, these final drafts are okay." And he sends them all to be typed.

What I'm saying is, though, this is a classic. This should be off limits. It's a violation of the rule.

THE COURT: From the defense.

MR. CASMERE: These are reports authored by the doctor in litigation for the Cascino Vaughan firm that have

been filed and made Rule 26 disclosures in all these different cases. There was a motion in limine that said that we can go into the work with the lawyers to establish bias.

So this is fair game. This isn't draft reports back and forth. These are the final reports that he drafted for submittal.

THE COURT: And the point that's trying to be established that he has authored many reports on behalf of the -- at the request of the firm over a particular period of time, that can be established as it tends to go to bias. But the details of the communications back and forth -- and part of the problem is that the witness doesn't wait for a question to be asked, and the witness --

MR. McCOY: Right.

THE COURT: -- starts offering up additional details that might stray into the exact kind of communications that the plaintiff doesn't want out. That's the witness that's doing that.

What I can do now is to admonish counsel to stay clear of the communications that the witness is having in other cases on substance, but if the point is just the volume --

MR. CASMERE: That's it.

THE COURT: -- and the time period --

MR. CASMERE: Yes.

THE COURT: -- you can establish that.

MR. McCOY: Communications, communications in this case, too. I mean, it's a rule for all cases.

THE COURT: Understood. To the extent there are work product communications between the expert and counsel, those are not to be inquired of.

MR. McCOY: Judge, I'd appreciate it if you'd advise the jury of exactly that, what you just said, the exposure --

MR. CASMERE: I haven't gone there yet. Hold on. We're putting the cart before the horse.

All I've done is say that in the same day he sent this report, he sent 12 other -- 11 other reports to the Cascino Vaughan firm. My next thing is going to be how much he did in the next year. And then I'm done.

MR. McCOY: That's exactly what the problem is.

THE COURT: He can establish the volume of work that this witness does on behalf of the firm to establish his bias point. I will instruct the witness to listen very carefully to the question that's being asked and answer only the question, and we can resume.

MR. CASMERE: Thank you.

(End of proceedings at sidebar.)

THE COURT: Okay. We can resume.

And again, Dr. Frank, I think it does become important to make sure you wait for the question to be completed and then just answer the question. Particularly in

certain areas, there may be a detail that you would like to offer that would ultimately not be relevant and appropriate for the jury's consideration. So I'd like you to continue to just listen carefully to the question and just answer the question.

And counsel is also directed to limit the questions and the form of the question to the appropriate areas that we discussed.

MR. CASMERE: I forgot what my last question was, Your Honor. Could I ask that it be read back for me?

(Record was read.)

BY MR. CASMERE:

Q. Doctor, you sent 12 reports to Mr. McCoy's firm dated September 16th, 2011, correct?

A. Yes.

Q. Nine of those were for lung cancer cases, correct?

A. I believe so.

Q. Do you know how many you sent to Mr. McCoy's office in the next year after that?

A. I have not counted them. There was a period of time where I sent many back, and then it's been quite awhile since I've written any new ones.

Q. I believe in that stack that I handed you that there are 36 reports to Mr. McCoy's office at Cascino Vaughan for lung cancer within one year of September 16th, 2011.

Does that sound right to you?

A. It sounds as reasonable as any other number.
Q. Mr. McCoy's firm is not your only client from asbestos firms in this litigation, is it?
A. No, I don't think of them as clients. But there are many firms that I work with around the United States.
Q. You have worked in the last five years with probably 25 to 30 different plaintiffs' law firms in asbestos litigation, correct?
A. That's probably accurate.
Q. Do you produce as many reports for those 25 to 30 other firms as you do for the Cascino Vaughan law firm?
A. Some I do more.
Q. You've been providing testimony like this for about 35 years, correct?
A. A bit longer, yes.
Q. You have never testified in court at the request of -- on behalf of a defendant in a personal injury case?
A. Correct.
Q. Ninety-nine-point-something percent of your time or your testimony is for plaintiffs in asbestos litigation; is that fair?
A. Yes.
Q. You generate about 400 to $500,000 a year in billings for this expert work that you do, correct?
A. Yes, for the university.

Q. You've told us that the money doesn't go directly to you; it goes directly to Drexel University?

A. Correct.

Q. It goes into a fund at Drexel, correct?

A. Yes.

Q. You know the account number?

A. 150421.

Q. You have access to that?

A. With the approval of the dean.

Q. And you've told us some of the things that you spend money -- that money on, correct?

A. Yes.

Q. One of the things that you spend that money on is research and paying for researchers at the university, right?

A. Yes.

Q. And those researchers work on material that you end up putting your name on, correct, as a co-author?

A. No. The person that I'm thinking of who I've supported primarily to do research, I've never put my name on any of her papers.

The only papers that I put my name on out of Drexel is either research that I've done with funding from my funding sources, which include the Department of Energy or the CDC.

I have not put my name on any papers that I have done with colleagues at the university that came out of research

that I decided to do with these funds.

Q. So in 35 years of this litigation, in taking the money and putting it into the institutions and using that money to pay for researchers, you've never put your name on any article that's been authored by somebody who you paid from that money; is that your testimony?

A. I'm trying to think. I would pay my own way to China. I didn't pay anybody in China, and we have our name on papers together.

I'm doing work in Sri Lanka. I've never paid anybody over there directly. I gave moneys to a colleague, and what he did with it was probably paid some radiologists to look at x-rays.

I don't recall that I've ever used any of that money where I've paid somebody and then put my name on it where I wasn't part of the research. And I can't even think of any work that I've done at the universities where that was done. It would usually be done with my work overseas.

Q. You charge $425 an hour for your time?

A. Yes.

Q. You spend about 300 to 400 hours a year doing legal work, correct?

A. Something like that.

Q. 300 hours time 425 is $127,500, correct?

A. Again, I don't have a calculator, and I'll take it that

your math is correct.

Q. 400 hours times $425 an hour is $170,000, correct?

A. Yes, but I have a -- you know, as I've testified many times, I have an hour minimum for looking at a chart. Some charts take me an hour; some charts take me less. Every lawyer I work with knows that there's a one-hour charge to look at a case and write a report.

Q. And the point is that you bill out 400 to $500,000, but the amount of hours that you actually work is a lot less than that?

A. Well, it may be -- you know, it may be more than that. It's been creeping up over the years. There have been more trials and more depositions, which is what generates moneys, too. But I certainly sometimes get multiple charts done within an hour.

Q. But you -- if you did 400 hours at $425 an hour, that's $170,000, correct?

A. Something like that.

Q. And you bill out -- last year, what -- you just did your taxes, right? How much did you bill out?

A. Last year was, for asbestos litigation, other litigation, reimbursement for travel, such as I'll get today because I bought my own ticket, the totality was $448,000.

Q. And you only worked 400 hours last year on this?

A. I didn't keep track of it. I don't work a 40-hour week. A short week for me is 55 hours. Some weeks it's 70 or 80 hours.

Q. Your point is that people like Mr. McCoy know that you charge that minimum and that they may be overcharged, but they pay it anyway, right?

A. If you consider it overcharged. I've never had anybody accuse me of overbilling them in 35 years.

Q. And they don't complain about it, right?

A. Nobody has ever complained.

MR. McCOY: Your Honor, object again to inquiring into fees.

THE COURT: The objection to the form of the question is sustained.

So, ladies and gentlemen, you can disregard that last question and the answer that was just given.

BY MR. CASMERE:

Q. Have they ever told you that you're charging them too much?

A. I've actually been told I don't charge enough. There are many people who do this kind of work, first of all, that keep all the money; secondly, who charge far more than I do.

Nobody has ever accused me of overcharging. Nobody has ever said I've under -- overcharged them. People tell me I'm worth more than what I charge, but obviously, I'm not doing it for the money.

Q. Last thing, Doctor, and then you'll be done with me.

ADAO, Asbestos Disease Awareness Organization --

A. Yes, sir.

Q. -- that's an organization you're involved with, correct?
A. I am the co-chair of the Scientific Advisory Board. I've been involved with them since 2004.
Q. And the other co-chair is Dr. Richard Lemen, correct?
A. Yes.
Q. He also testifies for plaintiffs in asbestos litigation, correct?
A. Yes.
Q. Wasn't there just a conference last weekend?
A. It was last Saturday. I was there. I spoke. I gave Dick's paper because he couldn't come at the last minute. I gave my own paper. I introduced the keynote address-giver.

Yes, I was there, and I participated. And I paid my own way there.

Q. The tag line or, I guess, the trademark or the slogan for the ADAO is "Voice of the Victims," correct?
A. That's what it says.

MR. CASMERE: Thank you, Doctor. I appreciate your time.

Thank you, Your Honor.

THE COURT: For Defendant Mobil.

THE WITNESS: Would you like your documents back?

CROSS-EXAMINATION

BY MR. BLACKWELL:

Q. Good afternoon again, Dr. Frank.

A. Good afternoon, sir.

MR. BLACKWELL: Members of the jury.

BY MR. BLACKWELL:

Q. My name is Jerry Blackwell, and I'm speaking on behalf of Mobil in this trial.

I've got a copy of your report here, and with the attachments, that's about 150 pages, would you say?

A. Something like that.

Q. The actual report portion, though, is about a page and just a little piece onto the second page, right?

A. I write short reports.

Q. I understand that. Well, in the short report you wrote, did you use the word "Mobil" in it anywhere?

A. No.

Q. When you were asked to perform an evaluation for the attorney here, were you asked to do anything to evaluate Mobil specific?

A. No. I was asked to determine what diseases I thought Mr. Krik had and what I thought caused it. It doesn't matter to me and it never matters to me whose product it was that may have caused it.

Q. Well, you understand in this case, Mobil has been accused, so it matters to us. Do you understand that?

A. I do now.

Q. Have you ever been to the Mobil facility in Joliet?

A. No.
Q. Now, you told us that you met Mr. Krik just -- just today, right? You said hello to him?
A. Yes, this morning.
Q. So if I said hello to him yesterday, I met him the day before you, right?
A. Yes.
Q. Now, do you have any knowledge whatsoever of whether Mr. Krik was exposed to any asbestos above the background level when he was working out there for the three weeks at the Joliet facility?
A. If one reads his deposition, one comes to that conclusion. And I confirmed that as I spoke with him this morning.
Q. Now, do you have --
A. He believed that the product he was taking out of those 25 or so heater units in those boxes were asbestos.

MR. CASMERE: Your Honor, I'm going to object that this is a Rule 26 problem.

MR. BLACKWELL: And my question is whether he has any knowledge.

THE COURT: This is similar to an earlier issue, which is, if you just listen carefully to the question that's being asked --

THE WITNESS: Okay.

THE COURT: -- the more you stray from the question,

Doctor, the more we're going to get into issues that might complicate things.

THE WITNESS: Okay. Yes, sir.

THE COURT: So the jury will disregard the doctor's last part of his answer there.

And let me ask counsel for Mobil to just move on to the next question.

MR. BLACKWELL: All right. Yes, Your Honor.

BY MR. BLACKWELL:

Q. Let me clarify a couple things with respect to background, and I'll try not to be repetitive, because I'm just going to try to fill in some of the gaps of the previous counsel.

He talked with you quite a bit about your history in providing testimony for plaintiffs' attorneys?

A. Yes, sir.

Q. The first case you had for a plaintiff's attorney was in 1977, true?

A. I believe that was the year.

Q. Since that time, you worked with over 50 different plaintiffs' law firms?

A. Yes.

Q. You've been retained in over 2,000 cases?

A. Yes.

Q. You have -- in the year 2010 alone, I think you said you reviewed 500 cases for plaintiffs' lawyers?

A. Four to five hundred probably.
Q. That's because you review four to five hundred a year --
A. Yes, so it would be more than 2,000.
Q. All right. How many would it be?
A. I've never added them up. It's thousands.
Q. You've done over a thousand depositions alone?
A. Yes.
Q. You've testified in trials like this over 150 times, haven't you?
A. Yes.
Q. Now, is it true, Dr. Frank, that you don't have any information regarding the dose of exposure from any product and/or how much that dose of asbestos from any product would have incrementally increased any risk of cancer?
A. That's two questions. I have no information about dose. And not having any, I can't do a calculation, not that I've ever done one like that.
Q. You've never attempted to do any kind of dose reconstruction estimate?
A. No. That's a science that is built on very shaky ground, according to the people who do it.
Q. Now, have you got any air sampling data from anywhere related to --
A. That's a very generic question. I've seen lots of air sampling data. I've seen none from the Mobil facility.

Q. Have you seen any that relates to any place Mr. Krik worked?

A. No.

Q. Now, just the fact that somebody is in an environment where there is dust doesn't mean, even if there's asbestos present, that it's all asbestos dust, does it?

A. Of course not, not -- products are made up of a mixture of things, and the dust that's created from those products will be a percentage asbestos and a percentage some other material.

Q. So in order to know what the percentage asbestos is, you have to have some kind of analytic done, don't you?

A. If you want to know what the amount was in either the original product or the air, you can do analytics.

Q. Well, if you want to know if an exposure level is above or below the OSHA permissible exposure limit, analytics would be helpful, wouldn't they?

A. They'd be required.

Q. And the permissible exposure limit is the amount of asbestos, for example, a worker might be exposed to over a 40-year working life and not be expected to have adverse health consequences, right?

A. No, it doesn't say that. And the OSHA regulations actually say that at the permissible level, people will still get disease.

Q. So the OSHA, the PEL, permissible exposure limit, doesn't

say, as far as you're concerned, that it is the amount that a worker can be exposed to over a 40-year working life and not be expected to have adverse health consequences?

A. Well, for any individual worker, they will not be expected to get it. But in populations exposed at that level, some people in that environment at those levels will be expected to get disease, and that's what the OSHA regulations clearly state.

Q. I'm asking you what does -- how does OSHA define permissible exposure limit, if you know? Does OSHA define --

A. It's a legally allowable limit for what a worker can be exposed to at the workplace. It doesn't mean that it's safe.

Q. But doesn't OSHA say that it's a legal allowable limit a worker can be exposed to over a working life and not be expected to have adverse health consequences? Yes or no?

A. It's a legally allowable limit, but it doesn't mean that it's safe.

Q. Would you answer my question, sir?

A. Yes, it says that.

Q. It does say that?

A. I believe so. I'd have to get the regulations out to see if it says it exactly that way, but that's the implication of what it says. It never uses the word "safe."

Q. But it does use the words, though, "not expected to have adverse health consequences," doesn't it?

A. Not expected, yes.

Q. I'm going to talk with you about cigarettes and smoking a little bit. The jury has heard quite a bit already.

Well, first let me ask you about asbestos. I think you've told us in spades now that asbestos is a toxic mineral, haven't you?

A. I have said that.

Q. And is it your view that as a toxic mineral that there is no minimal level of exposure that's safe for asbestos?

A. No, it's not because it's a toxic mineral. It's because it's a carcinogen. Not all toxic minerals are carcinogens.

Q. Well, cigarettes contain roughly 4,000 toxic chemicals, don't they?

A. Yes, but they also contain 69 or 70 carcinogens.

Q. Yeah, we'll get through quicker if -- you answered ahead of my question. You got to let me ask you the question.

So I think you did tell us earlier there are roughly 69 carcinogens in cigarette smoke?

A. Yes.

Q. Now, would you agree that if an asbestos worker is not a smoker, then that worker has a very limited risk of lung cancer?

A. I don't understand the question. I don't know what "limited risk" is.

Q. All right.

A. Has an increased risk, more limited than if he was also a smoker.

Q. Could you pull up M 104, please? Let's see what Dr. Selikoff says about it. Could you go to page 9?

MR. McCOY: Which year is this one?

MR. BLACKWELL: 1967.

BY MR. BLACKWELL:

Q. Okay. We'll read together. "Among the 87 men" --

A. Yes.

Q. "Among the 87 men who did not smoke and now we're using statistics based upon smoking habits in the population, there should have been between zero and one cancer of the lung. There were none. In other words, from 1963 to the present time in 1967, and that includes up to today or up to yesterday when I left New York, have yet to see a lung cancer in an asbestos worker who didn't smoke."

Next page. This says, "Also, I didn't see a cancer of the lung in an asbestos worker who smoked cigars or an asbestos worker who smoked pipes if he didn't smoke cigarettes at the same time."

So he makes a little joke. "If levity were in order, I perhaps should say put that in your pipe and smoke it."

But here's his point. "But this information is of tremendous importance. It is almost like saying that if you work in a dynamite factory, you shouldn't smoke. And cancer of

the lung would be wiped out in your trade if you people wouldn't smoke cigarettes, period."

Is that what Dr. Selikoff said?

A. That's what he said to the gathering of asbestos insulators the year before he published on the synergy.

Q. My question is --

A. That's what he said. It speaks for itself.

Q. And he didn't say, you would wipe out all lung cancer in the trade if you first stopped being exposed to asbestos. That's not what he said, did he?

A. It speaks for itself.

Q. You can answer my question.

A. It speaks for itself.

Q. In 1978, he reported only four lung cancer cases out of over two thousand nonsmokers in the insulation trade; isn't that true?

A. Yes.

Q. So if a nonsmoker has an increased risk, then it's a very limited risk, isn't it?

A. It's more limited than if you do smoke, yes.

Q. Are you aware that the World Health Organization says that smoking is the -- is the cause of 95 percent of lung cancers?

A. I have not seen that statement. I've seen the Surgeon General's statement in this country.

Q. All right. 90 percent then?

A. Or 85.
Q. All right. Now, you've seen a statement from no one, no health organization in the industrialized world, that says asbestos exposure is the cause of 85 percent of lung cancers, have you?
A. I would never expect to see that.
Q. I didn't ask what you would expect.
I asked you what you've seen. Have you --
A. I've never seen it.
Q. Now, cigarette smoking weakens the lungs, doesn't it?
A. It can.
Q. Well, it decreases their ability to remove dust like asbestos, doesn't it?
A. It does.
Q. It irritates the air passageways, doesn't it?
A. Yes.
Q. It leads to the development of more mucus in --
A. Yes.
Q. -- the respiratory system, correct?
A. Yes.
Q. And that, in turn, can block the air passageways, true?
A. It can.
Q. And if they're blocked, then that decreases the body's ability to remove dust, including asbestos fibers, doesn't it?
A. Yes.

Q. So the other thing that tobacco smoke can do, it damages something called the mucociliary escalator?

A. Yes.

Q. And the mucociliary escalator is what, for the ladies and gentlemen of the jury?

A. It's the upper airways where you have mucus globules that attract foreign materials, be it asbestos or bacteria or viruses. And then the cilia are little hair-like cells that push these up and out of the lung. You end up swallowing it.

Q. And the cilia are little hair-like structures, aren't they?

A. That's what I just said.

Q. And they flip about how many times a minute?

A. Many.

Q. Many as in hundreds?

A. Yes.

Q. So they represent somewhat the body's last defense mechanism for keeping foreign particulate out before it can make its way into the lungs?

A. There are other ones, too. There's macrophages, but it's the main one of the upper airway.

Q. It's the mucociliary escalator?

A. Yes.

Q. And so when that's been damaged by cigarette smoke, it makes it then easier for all types of dust to get into the lungs because it's damaged?

A. Yes.
Q. Then it makes a pathway for more asbestos to get into the lungs, this smoking, true?
A. Yes.
Q. And it also is the reason that the fibers can go deeper into the lungs, true?
A. I don't know that that's ever been shown.
Q. So do you -- you say you just don't know or are you --
A. I don't know. I've never seen any data that says they get deeper into the lungs because of smoking.
Q. Well, but the point is, when we're talking about cigarette smoking, it really is a horrible gift that keeps on giving, isn't it?
A. It can be, yes.
Q. Now, despite there being countless publications and presentations to this day, researchers have not reported another single case where there's been a mortality of an asbestos worker who didn't smoke regularly; is that true?
A. I think Dr. Markowicz reported on some.
Q. Do you know or do you think?
A. I'd have to look at the paper. I believe he has nonsmokers who got excess lung cancer.
Q. And so I ask about whether or not you knew of any mortalities of an asbestos worker who was a nonsmoker?
A. The Markowicz paper has some of those individuals.

Q. All right. We'll take a look at it.

Now, so smoking is a number one cause of lung cancer in the general population, and we also know it's a number one cause -- it's related in lung cancers also with respect to asbestos-exposed workers?

A. Because more people smoke than are exposed to asbestos or arsenic or other things, it naturally would be the number one cause.

Q. I'm simply asking if it is or isn't. And it is, isn't it?

A. Yes.

Q. Number one in the general population and number one for asbestos-exposed workers, too, right?

A. Because it's the number one exposure that people in the population have, yes.

Q. But cigarette smoking does more than that, because cigarette smoking causes COPD -- it can cause COPD?

A. And many other diseases which your colleague asked me about.

Q. Let's just stick with COPD for a minute.

A. Yes. He asked me that already.

Q. Well, I'm going to ask you something maybe he didn't. All right?

Now, would you degree with me that COPD, the fact that someone has COPD in addition to the smoking, is an independent risk factor for developing lung cancer?

A. I'm not sure it's an independent factor. You don't have to have COPD to get lung cancer. It's another disease that occurs from cigarettes. And if you are someone who has COPD, you're more likely to get lung cancer because you've had more smoking.

Q. Have you studied the literature to assess whether or not COPD is an independent risk factor for developing lung cancer?

A. Not especially. I've read some of the literature, and my take on it is that it represents people who smoke more are more likely to get COPD. They're also more likely to get lung cancer, therefore, because they've had a higher amount of smoking.

MR. BLACKWELL: Your Honor, I move to strike the answer after the words "not particularly" as not responsive.

THE COURT: Objection is overruled. The answer can stand.

BY MR. BLACKWELL:

Q. Have you looked at the literature, Dr. Frank, to determine whether or not emphysema, the fact that someone has emphysema, is an independent risk factor also for developing lung cancer?

A. COPD includes two diseases, one of which is emphysema. So I haven't looked beyond what I've just told you.

Q. Now, you had made a statement that I have on my note pad. You were talking to Mr. McCoy about the synergy, and at the time you were discussing smoking and asbestos. And you made the statement that smoking and something else may also increase

harm. So it isn't just smoking and asbestos, but it can be smoking in combination of other types of exposures that can cause harm?

A. I did share that with the jury.

Q. Now, were you aware that Mr. Krik was exposed to a number of other carcinogens beyond cigarettes?

A. Not specifically.

Q. Were you asked to -- well, could we first pull up -- I want to show you what's been marked as Mobil's Exhibit 353. It's a medical record.

This is a medical record that's dated March 16th, 2011. And do you see here where it says, "Mr. Krik reports contact with the following hazardous chemicals: Asbestos, benzene, coal, lead, radiation, and chemicals"?

A. I see that.

Q. Would you agree with me that, in your view, benzene is also a known carcinogen?

A. Yes, but not for the lung.

Q. Would you agree with me that in your view that there's no safe level of exposure to benzene?

A. I agree with the American Petroleum Institute that said that in 1948, that as a carcinogen there was no known safe level.

Q. Dr. Frank, I would love to get us out of here by 5:00. So if you could answer yes or no if you're able to --

A. I would agree.
Q. Radiation --
A. Is a carcinogen.
Q. -- is a known cause of cancer?
THE COURT REPORTER: I'm sorry. One at a time, please.
BY MR. BLACKWELL:
Q. Radiation, a known cause of cancer?
A. Yes.
Q. Were you asked to evaluate to what extent Mr. Krik's exposure to radiation played a role in the development of lung cancer?
A. No.
Q. Were you asked to evaluate to what extent his exposure to any other chemicals or exposures other than asbestos and cigarettes could have contributed to his lung cancer?
A. No.
Q. Were you even aware of this document?
A. Not that I recall seeing.
Q. Is this the first time you've seen it?
A. That I recall. It may have been in the records, but I have no details beyond what's there.
Q. So all the records that you have in this case, everything you got, you received from Mr. McCoy?
A. Yes.

Q. And as you sit here on the stand today, you don't recall him showing you this record?

A. Listen, it was back in 2011. I don't remember of 150 pages if it was there or not --

Q. I'm just asking if you remember it or not.

A. I do not remember.

Q. Just a couple other questions that I want to put something in context for the jury about, just the nature and the volume of the lungs.

Doctor, if you were to take a human lung and spread it out on the floor, if you could imagine that, about how much surface area would the lungs take up?

A. A huge amount, probably if you spread it out thin enough, bigger than this room.

Q. So there is tremendous amount of reserve and capacity in the lungs, true?

A. Yes.

Q. There are any number of people who live -- lead fairly -- fairly normal lives with one lung?

A. Some do; some don't.

Q. Pope Francis, for example, has had one lung since he was a teenager. Did you know that?

A. Yes.

Q. And he had a lung removed as a teenager due to an infection?

A. Yes.

Q. But the point is that the lungs do have a great deal of reserve and capacity in them, and it takes a great deal of insult to cause them damage?

A. That's probably a fair statement.

MR. BLACKWELL: Doctor, give me one moment. I think that's going to be all I have, so just a second.

(Brief pause.)

MR. BLACKWELL: Thank you, Dr. Frank.

THE WITNESS: You're welcome.

THE COURT: Anything further from the plaintiff for Dr. Frank?

MR. McCOY: Just a couple questions.

REDIRECT EXAMINATION

BY MR. McCOY:

Q. Dr. Frank, I'm going to go to this Exhibit 353 that Mobil just has up here still about the asbestos, benzene, coal, lead, radiation, and chemicals.

For someone who has worked in the Navy ships since 1954 or someone who has been a boilermaker or a pipefitter since 1970, is there anything unusual about reporting those exposures?

A. Not especially.

Q. Would it surprise you if they didn't report those exposures?

A. If they didn't have them, it would be unusual, given the nature of work of pipefitters, boilermakers.

Q. So those would be common exposures that someone in those trades would encounter?

A. Yes.

Q. There was some testimony that you had reviewed four to five hundred cases per year for attorneys; is that right?

A. Yes, sir.

Q. Okay. And I think there was testimony that you had in one year generated maybe 36 reports for my firm; is that right?

A. Yes, sir.

Q. Okay. So in terms of the number of cases per year that you do for lawsuit work, the four to five hundred would not be anything unusual; is that right?

A. No, it's been the average for the last few years.

Q. Does that include some nonasbestos cases?

A. Yes.

Q. What other areas do you look at sometimes?

A. Occasionally some benzene work. From my days in Kentucky, I still occasionally do a black lung case, co-workers' pneumoconiosis. And then I may do some odd workers' comp cases.

The lady who looks after the firefighters in Philadelphia brings me some of her cases, and they're not always asbestos.

Q. Would it be fair to say that there was a lot of years in the last ten years where you did five or less reports for my law firm?
A. Most of those years.
Q. Would be five or less?
A. Yes.
Q. Okay. The question about the data in the Markowicz study being from insulators; is that right?
A. Yes.
Q. Okay. And the Selikoff-Hammond study that was done earlier?
A. It was also insulators, the same group.
Q. Why is it that those have application to somebody who is a pipefitter?
A. Because they're both trades that have a lot of exposure to asbestos. There are many trades that have exposure to asbestos. And while insulators may have more than others, the basic principles apply to these other crafts, pipefitters, boilermakers, plumbers, sheet metal workers, that would all apply to them, shipyard workers.
Q. Based on the questions you were asked by the defense counsel and the things they pointed out, is there anything that changes your view that the Markowicz and Selikoff studies support the synergistic effect?
A. No.

MR. McCOY: That's all the questions I've got. Thank you.

MR. CASMERE: No, thank you.

MR. BLACKWELL: Your Honor, I just want to move into evidence Mobil's Exhibits 353, the medical report, and 104, the Selikoff.

THE COURT: The Selikoff document will not be admitted as a substantive piece of evidence, but the medical record will be admitted.

(Mobil Exhibit 353 received in evidence.)

THE COURT: Thank you, Dr. Frank. You may step down.

THE WITNESS: Thank you, Your Honor.

(Witness excused.)

THE COURT: Ladies and gentlemen of the jury, we are right at 5:00. I certainly very much appreciate your willingness to stay until 5:00.

Have a good evening. We'll resume again tomorrow at 10:00 a.m.

Oh, that's right. Ms. Heckert, you have your job interview that is scheduled to go until 10:30?

JUROR HECKERT: Correct.

THE COURT: So let's get started at 11:00.

Will that give you enough time to --

JUROR HECKERT: It should, yes.

THE COURT: So we'll start a little late tomorrow at

11:00 a.m. Don't discuss the case amongst yourselves or with anyone. Don't try to do any research or investigate any matters involving the case.

Have a good evening. We'll see you tomorrow at 11:00. Thank you. All rise.

(Jury out.)

THE COURT: Is there anything we need to take up this evening?

MR. McCOY: Judge, it's what I mentioned before. And, you know, with the testimony on causation being stricken, I have to say, you know, I've got significant concerns about proceeding forward with the expenditures in this case.

I don't know that I have an answer at this very minute because we were in the midst of all kinds of things here today, but I think it's something that should be decided by the Court of Appeals. Whether I absolutely have to ask for some sort of a certification in the case, I can't say I absolutely have to now. I have to just think about that for a little bit.

THE COURT: Okay. Well --

MR. McCOY: I'm very concerned that that's the remedy that we should be asking for here.

THE COURT: Well, what we have is an evidentiary ruling by, first, Judge Lee and then later me and then in the midst of trial.

And with respect to the in-court ruling, let me just

clarify, in light of the factual proffer that was made, that it's not a misapprehension on my part that the -- about the distinction between the cumulative exposure testimony and the each-and-every-exposure testimony.

For testimony about cumulative exposure causing lung cancer to be useful testimony for this trial, for this jury, as to these defendants, it needs to be related to whether the exposure at the hands of these defendants caused plaintiff's lung cancer, which is what this trial is about.

As was clear when Judge Lee said that it is not an acceptable approach for a causation expert to take, namely, to draw a causation opinion as to particular defendants, including hypothetical defendants in response to a hypothetical question, for that causation expert to take an approach based on cumulative exposure that's informed by an each-and-every-exposure opinion, it remains clear to me in light of the factual proffer that Dr. Frank's cumulative exposure testimony is based on the each-and-every-exposure theory above -- exposure meaning above background amounts and that that testimony is based on each and every exposure being a substantial factor.

And just as Dr. Frank, to his credit, cannot disaggregate exposures as a matter of science, cumulative exposure opinion cannot be disaggregated from the each-and-every-exposure opinion as a matter of evidence under

Rule 702, and now that I've heard the proffer, under Rule 403. The risk that that answer to the hypothetical relying on the cumulative exposure opinion would be considered as evidence of a particular causation as to these defendants would, in fact, in my view, be unfair and confusing given the weakness of the probative value of the opinion when it's informed, as it is, by the each-and-every-exposure principle.

And the goal under 702 is to be a gatekeeper. And once the parameters are set by that rule, Rule 403 still has a role to play in precluding testimony that would be confusing or unfairly prejudicial in a way that outweighs the probative value.

So for those reasons, I've ruled that the proffered testimony is not admissible in the context of this particular trial.

Now, whether that kind of evidentiary ruling ought to be certified for a mid-trial interlocutory appeal, the answer to that question, in my view, is quite clearly no. It is not a case-dispositive ruling. It is an evidentiary ruling that, if erroneous, would be taken up in the context of an appeal on final judgment. It is not a case-dispositive ruling that has the likelihood of resolving this case in an expeditious manner.

Mr. McCoy earlier made the point that this is a long trial. It's not that long of a trial. It's two weeks. It is not the case that there is a dearth of evidence about

causation. There is evidence that's in the case, even from Dr. Frank himself, about asbestos, about exposures, about how exposure has been reported to cause cancer. So it's not the case that that -- though my ruling is dispositive of the issues in the trial.

The other alternative, as I imagine it would be, would be a mandamus petition, which is up to the plaintiff. If the plaintiff wants to petition the Court of Appeals for a writ of mandamus, that's an option that the plaintiff has. But I am not staying this trial for that.

And I would also note that Judge Lee's opinion has been the ruling that's been operative for quite some time now. My pretrial rulings have been the operative rulings for some time now. And if there were other appellate options that the plaintiffs wanted to pursue, they had the opportunity to do so earlier.

Where we are in the trial at this point is simply that I've made evidentiary rulings and that I've accepted factual proffers. I've evaluated them. I've looked at the Daubert rulings many, many times now, and I have exercised my discretion, as I feel I am obligated to do, and I've issued the rulings that I've issued.

So that's where we are with that. People have their options, and they are what they are.

MR. CASMERE: If the plaintiff wants to consent to a

directed evidence, Owens-Illinois would accept that --

THE COURT REPORTER: I'm sorry.

MR. CASMERE: If the plaintiff wants to consent to a directed verdict for Owens-Illinois, we would accept that and consent to that, and then he can appeal it.

MR. MORRIS: Your Honor, one perspective -- additional perspective on that, Bob -- and I'm not trying to talk you into this at all -- but you mentioned the amount of days that could be wasted.

If it is true, as we believe it would be, that Dr. Burhani will not deviate from her evidence deposition and say that asbestos caused this man's disease, which she did not say, and we can argue about what's in the record, but I think the record as it stands would still say, Your Honor, that under the *Korte versus Exxon* case, the plaintiff is still required to have expert testimony.

And I guess what our approach would be is to say, you know, the Court commented on the literature that he commented on. But, of course, the literature that he commented on can't be substantive evidence. So that in and of itself cannot --

THE COURT: But his testimony about the literature can be considered.

MR. MORRIS: I think you would need to comb that record to see whether he gave an opinion based on that literature or whether he merely recited that the literature

said it. If it's the latter, I don't think it's in play for those purposes. If it's the former, it may be, depending upon whether it was an opinion. Not just that asbestos generally has been shown to cause those things, which tells us nothing and doesn't inform the law on this.

It would have to be that in some respect these defendants, either separately or maybe combined, were a substantial factor in causing the injury.

So if you don't have Frank and you don't have Burhani and the law says you need an expert and all you are is an oath helper with literature, maybe, maybe we could get to the issue of deciding that a directed verdict is the way to go.

But, Bob, believe me, I'm not trying to push that if it's not something you don't want to hear.

MR. McCOY: Well, I'm not going to take the position on whether any of the defense statements are right or wrong.

THE COURT: Right.

MR. McCOY: Or whether Your Honor's statement is right or wrong.

THE COURT: That is certainly a careful approach at this point.

MR. McCOY: I would say this. You know, I've had two cases in my life where on motions *in limine* things have gotten knocked out, and we've taken appeals, so -- but I don't remember one specific to this kind of situation. That's why

it's hard for me to say one way or the other exactly what's the right thing to do for my client. That's what I'm concerned about, my client, Mr. Krik.

(Discussion off the record.)

MR. McCOY: I hear him breathing back there. I was trying to say he can leave the courtroom.

But it did happen to me twice before. I've taken two appeals, stipulated to entry of judgment, whatever you want to call it, based on a particular ruling, and then had that go up.

THE COURT: Sure. And that option was not what I thought was being asked.

I thought what was being asked was an interlocutory appeal under 1292, and that was the basis for my earlier comments.

MR. McCOY: Right. And that's why I was listening to Your Honor's thought about it, the defense attorneys about it. So like I say, I don't have enough knowledge on experts with particular reference, I think, to what Mr. Morris was saying about the issues about -- you know, he's saying now we need expert testimony or I might take that position. That's really one of my concerns down the road, is when we get to the jury, what will happen. Will people say, "Well, Dr. Frank couldn't -- plaintiff had nobody who said causation"?

And that's my concern. If that argument is made, then that's what I'm most worried about.

Secondly, I'm worried about just not having somebody who tells the jury in his opinion it's causation, because oftentimes jurors expect that, whether it's required or not required, which I think is what Your Honor is saying. It may not be required that somebody says that. That's why it's not dispositive, in your view.

So -- but jurors certainly look for that, and they saw what happened. I mean, the opinions were not allowed. Why were they not allowed? Well, they can go back there and speculate on all kinds of things, because it might be because Your Honor thought that the evidence didn't support that, so -- or they might think that it wasn't allowed because a witness was not qualified. There's all kinds of reasons why they're going to speculate about what happened.

So, I mean, that's -- I'm just laying out for you why I don't have --

THE COURT: No, right. Look, there is no --

MR. McCOY: -- why I don't have an immediate course of action.

THE COURT: There's no reason for you to have an immediate course of action at this very moment.

And there's also no doubt that the plaintiff's case was impacted by Judge Lee's opinion many months ago and the subsequent history of the case.

What I've got before me is making the rulings that

get teed up for ruling, and I've endeavored to give those rulings.

We have some time to consider what you want to do since we're not starting until 11:00 a.m. tomorrow with the jury. You should consider what your options are. If the parties want to discuss amongst themselves issues, they are certainly free to do so. There's nothing -- other than what I had taken to be a request for an immediate certification under 1292, which I think is not quite the request that was made, but that's what I thought it was -- that request is denied for the reasons I've earlier stated. I have no other pending request before me. And you should consider what your options are, and we can move forward.

On my end, I will be here ready to resume the trial tomorrow morning.

MR. McCOY: And the other things, I mean, I'm concerned with is that I believe, you know, Judge Lee's ruling has been expanded, and I don't necessarily agree from the start with Judge Lee's ruling. Well, all these issues are preserved to go up on what could be an appeal.

I think the only question I have for my client is should I attempt to do that -- to do that now. And I don't want to waste anybody's time, is what I'm saying. I don't want to play around with this.

THE COURT: Okay.

MR. McCOY: So I'm going to think about this with the others at my office, and I may send an email or two to the defense attorneys on it. But, of course, the difficulty is trying to do it in the middle of a trial with another witness coming tomorrow. But you're right, there's a little more time.

THE COURT: There is a little bit more time. And who is our next witness?

MR. McCOY: The next witness would be Frank Parker, who is our industrial hygienist. So I didn't hear any limitations about him other than the every-exposure ruling from Judge Lee, which again --

THE COURT: Right. As I recall, he was less a causation person than a --

MR. CASMERE: He is not a causation person.

THE COURT: -- an exposure person.

So he is somebody who can talk about what the type of work entails and how that might generate exposure.

MR. MORRIS: Except at Mobil, pursuant to the Court's ruling.

THE COURT: Right.

MR. CASMERE: And within the confines of his disclosure.

THE COURT: Fair enough.

MR. McCOY: What was the ruling on except at Mobil?

MR. MORRIS: He couldn't testify about Mobil.

MR. McCOY: Specifically?

MR. MORRIS: Right.

THE COURT: Correct.

MR. MORRIS: Or asbestos content at Mobil.

THE COURT: Right. He was not a properly disclosed fact witness with respect to Mobil.

MR. MORRIS: And so that we're clear, we'll have a little bit of that same line that we're navigating today, which is, what is the relevance of general testimony about steel mills and other locations and presumably perhaps even slinking into other refineries used as, as you said, at a high level for an indicator of what the jury ought to think about Mobil.

And the closer it gets to that lower level and the M word, the closer the significant prejudice to us will be. So I expect we'll have a lot of the same sorts of questions that we saw today, and we'll just try to have to navigate around them.

I'm, again, expressing my concern that we do look a little like popinjays having to keep getting up. And I think the jury is a little bit irritated at the defense for objecting to this stuff.

MR. CASMERE: He -- I believe Mr. Parker's opinions are general in terms of insulation, cement. Not Kaylo, not defendant specific.

MR. McCOY: Well, he certainly filed an affidavit, summary judgment with Judge Robreno about Mobil. I mean, that

was part of the summary judgment.

THE COURT: Well, we're not going backwards. You know, we've got the ruling on Mr. Parker. Everyone, including myself, will go back and remind ourselves of the parameters.

MR. BLACKWELL: But, Judge Shah, is there any kind of admonition that can be given? Because it's difficult and just a tad bit frustrating when we do have to continue to get up. And oftentimes issues they're raising are not new. It's the same thing again and again.

And I don't -- I'm not sure what Your Honor can do. But is there something Your Honor can do?

THE COURT: What I can do in our -- given our current posture is make sure that we convene tomorrow no later than, say, 10:45 or let's say 10:45, and we can talk more specifically about Mr. Parker and what is fair game, what is not fair game, without the pressure of the jury sitting in the box and being concerned about jury time.

And if I could give you some more rules of the road before Mr. Parker hits the stand, then I will endeavor to do that.

Anything else?

MR. CASMERE: No, Your Honor.

THE COURT: Our 48-hour exhibit rule is still in place, and I have not heard of any issues. So I'm not expecting any exhibit issues tomorrow.

MR. MORRIS: I think after Mr. Parker, Bob said that there were two Mobil depositions that he wanted to read. So if that's true, we'll have readers here. Parker is not going to take up the whole day, I can't imagine.

MR. McCOY: No, it shouldn't take up any -- should take up less time than Dr. Frank.

MR. MORRIS: So does that sound like a plan, Bob?

MR. McCOY: Yeah, I mean, that's what I think we said.

MR. MORRIS: And not --

MR. McCOY: That's the plan. We agreed on that already.

MR. MORRIS: And not someone else, too?

MR. McCOY: Talking about another?

MR. MORRIS: That will be plenty for tomorrow, in other words?

MR. McCOY: Yeah, I'm sure that will pretty much occupy the day, I think, yeah.

THE COURT: Okay. Thank you. Then we are adjourned.

(Adjournment of proceedings until 4/22/15 at 10:45 a.m.)

C E R T I F I C A T E

We, Colette M. Kuemmeth and Nancy L. Bistany, do hereby certify that the foregoing is a complete, true, and accurate transcript of the Trial proceedings, Volume 2, had in the above-entitled case before the HONORABLE MANISH S. SHAH, one of the Judges of said Court, at Chicago, Illinois, on April 21, 2015.

/s/ Colette M. Kuemmeth, CSR,RMR,FCRR *04/21/15*

/s/ Nancy L. Bistany,CSR,RPR,FCRR *04/21/15*

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Eastern Division

Date